

Family SUDIDAE

Body elongate, subcylindrical to compressed. Snout obtusely rounded as seen from above. Eyes variably large to vestigial or even absent. Maxillary expanded posteriorly, **usually** with single supramaxillary. Teeth in narrow bands, pointed, uniserial in jaws, usually on palatines. Vomerine teeth when present in 2 well separated patches. No air bladder. Skeleton rather weakly ossified. Posttemporals nearly meet above supraoccipital. Dorsal short, variably premedian, median or postmedian. Pectoral lateral. Ventrals not widely separated. Sometimes fin rays extended.

Bathypelagic. As here defined this family includes a wide range of forms, some very aberrant as the remarkable eyeless Ipops, with modified luminous organs on top of the head. Bathypterois is remarkable for some of its greatly extended rays functioning as tactile organs, thus in a measure compensating for their reduced eyes.

Analysis of genera

- a¹. Body nearly or quite cylindrical; dorsal median or premedian; anal short.
- b¹. Chlorophthalminae. Body moderately long, partly cylindrical; head wide as deep; snout rather short; maxillary reaches below front or middle of eye, which large; ventral fins below dorsal, which premedian.
- c¹. Maxillary not reaching over 1/2 in eye; interorbital less than vertical eye diameter; ventral inserted below dorsal; eyes long as or longer than snout, 3 in head. Chlorophthalmus.
- c². Maxillary reaches beyond eye; interorbital wider than vertical eye diameter; ventral inserted slightly before dorsal; eye shorter than snout. Bathysauropsis.
- b². Body elongate, subcylindrical or sompressed; head depressed; snout more or less spatulate; mouth large; maxillary reaches beyond eye.

d¹. Notosudinae. Eyes moderate or well developed; fin rays not prolonged; dorsal median. Notosudis.

d². Bathypterinae. Eyes very small or entirely absent; outer caudal and lowest ventral fin rays sometimes excessively extended.

e¹. Eyes small, distinct; caudal and paired fins with extended modified rays; vent nearly median.

f¹. Pectoral inserted very high on shoulder girdle, normal.

Benthosaurus.

f². Pectoral with rays formed in 2 distinctly separated groups on each side. Bathypterois.

e². Eyes vestigeal and covered by scales or entirely absent; fin rays not prolonged; vent pre-median.

g¹. Eyes vestigeal, covered by scales of normal size.

Bathymicrops.

g². Eyes entirely absent; snout
and upper part of head covered
by pair of large transparent
membrane like bones, each cov-
ering large luminous organ.

Ipnops.

a². Paralepidinae. Body well compressed, elong-
ate, slender; head attenuated; dorsal far
postmedian; anal long.

h¹. Teeth entire, round, slender,
some on palatines and in man-
-dible rather enlarged.

Paralepis.

h². Teeth triangular, edges uneven
or jagged and of equal
length; palatine teeth very
small in young, absent with
age.

Sudis.

Genus Chlorophthalmus Bonaparte

Chlorophthalmus BONPARTE, Fauna Italica, Pesce, vol. 3,
fasc. 28, 1840, no pagination. Type Chlorophthalmus
agassizii BONAPARTE, monotypic.

Hyphalonedrus GOODE, Proc. U. S. Nat. Mus., vol. 3,
1880, p. 484. Type Hyphalonedrus chalybeius GOODE
and BEAN, monotypic.

Pelopsia FACCIOLA, Natural. Siciliana, vol. 2, 1883,
p. 145. Type Pelopsia candida FACCIOLA.

Parasudis REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7,
1911, pp. 127, 128. Type Chlorophthalmus truculentus
GOODE and BEAN, monotypic.

Body rounded, terete. Snout conic, rather short. Eyes nearly equal snout or larger. Mouth wide. Maxillary long, expanded posteriorly, reaches below front or middle part of eye; supplemental bone single. Teeth minute, in narrow bands in jaws. Vomerine teeth in 2 separated patches. Interorbital width shorter than vertical eye diameter. Pseudo-branchiae well developed. Branchiostegals 10. Lateral line axial, complete. Dorsal premedian, without filamentous rays. Adipose dorsal present. Anal opposite adipose fin. Caudal forked. Ventral behind dorsal origin.

Analysis of species

- ¹
a . Chlorophthalmus. Maxillary reaches eye or
to middle of eye.
- b¹. Head 3 to 3 1/3; maxillary reaches well
beyond front eye edge.
- c¹. Scales 58 to 63. agassizii.
²
c . Scales 50. proridens.
- b². Head more than 3 1/2; scales 48 to 56.
- ¹
d . Maxillary reaches front eye edge;
eye scarcely over 3 in head.
- ²
d . Maxillary reaches well beyond front
eye edge. chalybaeus.
- a². Parasudis. Maxillary not reaching front
eye edge. nigripinnis.
truculentus.

Chlorophthalmus agassizi Bonaparte

Chlorophthalmus agassizi BONAPARTE, Iconogr. Fauna

Italica, Pesce, vol. 3, fasc. 28, 1840, no pagination, pl., fig. 2 (two figures). Italy; Cat.

Metod. Pesc. Europ., 1846, p. 36 (Mediterranean).

-- FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1911 (1912), p. 563 (types). -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 2, Dec. 1928, p. 19 (discussion).

Chlorophthalmus agassizii GUNTHER, Cat. Fishes Brit. Mus.,

vol. 5, 1864, p. 404 (Messina). -- CANESTRINI, Fauna

Italica, Pesce, 1874, p. 123 (Naples, Sicily). --

GOODE and BEAN, Oceanic Ichth., 1895, p. 60, pl. 19,

fig. 70 (N. 28° to 39° W. 70° to 86°, 159 to 273

fathoms). -- JORDAN and EVERMANN, Bull. U. S. Nat.

Mus., Bull. 47, pt. 1, 1896, p. 541 (compiled).

Aulopus agassizi VALENCIENNES, Hist. Nat. Poiss.,

vol. 22, 1849, p. 521 (Naples; Messina). --

VAILLANT, Exped. Sci. Travailleur et Talisman, Poiss.,

1888, p. 121, pl. 12, figs. 3a-c (Cape Verde Islands,

Sargasso Sea, Azores, 1105 to 1440 meters). --

GRIFFINI, Manual. Ittiol. Italiana, 1903, p. 268,

fig. 146.

Scopelus agassizi VALENCIENNES, Hist. Nat. Poiss., vol.

22, 1849, p. 521 (name in text).

Pelopsia candida FACCIOLA, Natural. Siciliana, vol. 2,

1883, p. 145.

Pelopsia scillae FACCIOLA, Natural. Siciliana, vol. 2,

1883, p.

Chlorophthalmus productus GÜNTHER, Rep. Voy. Challenger,
vol. 22, 1887, p. 193, pl. 50, fig. D. Off Matuka,
Fiji, 315 fathoms. -- GOODE and BEAN, Oceanic. Ichth.,
1895, p. 61 (reference). -- BRAUER, Deutsch. Tiefsee
Exped. Valdivia, vol. 15. Tiefsee-Fische, 1906,
p. 379 (reference). -- WEBER Siboga Exp., vol. 57,
Fische, 1913, p. 79 (Madura Sea, 289 meters). --
WEBER and BEAUFORT, Fishes Indo Austral. Archipelago,
vol. 2, 1913, p. 177, fig. 69 (Madura Sea material).
-- FOWLER, Mem. Bishop Mus., vol. 10, 1928, p. 64
(compiled); Annals Natal Mus., vol. 6, pt. 3, May
1929, p. 249 (off Tugela River mouth, 200 fathoms).

Chlorophthalmus cormiger ALCOCK, Journ. Asiatic Soc.

Bengal, vol. 63, pt. 2, No. 2, 1894, p. 133, pl.

6, fig. 5. Bengal Bay, 145 to 250 fathoms; Illustrat. Zool. Investigator, pt. 2, 1894, pl. 15, fig.

8. -- GOODE and BEAN, Oceanic Ichth., 1895, p. 511

(reference). -- ALCOCK, Journ. Asiatic Soc. Bengal,

vol. 65, pt. 2, 1896, p. 332 (compiled); Cat. Deep

Sea Fishes Indian Mus., 1899, p. 155 (Bay of

Bengal, off Madras coast, 145 to 250 fathoms). --

BRAUER, Deutsch. Tiefsee Exped. Valdivia, vol. 15,

Tiefsee-Fische, 1906, p. 145 (380) (West coast

Sumatra and off North Africa, 371 to 977 meters).

-- WEBER and BEAUFORT, Fishes Indo Austral. Archipel-

ago, vol. 2, 1913, p. 178 (compiled).

Depth $4 \frac{7}{8}$ to $6 \frac{3}{4}$; head $2 \frac{1}{4}$ to $3 \frac{1}{3}$, width $1 \frac{4}{5}$ to 2. Snout $3 \frac{1}{8}$ to $3 \frac{7}{8}$ in head from snout tip; eye 2 to $2 \frac{4}{5}$, greatly exceeds snout or interorbital; maxillary reaches $\frac{1}{4}$ to $\frac{2}{5}$ in eye, expansion $2 \frac{2}{3}$ to $2 \frac{7}{8}$ in eye, length 2 to $2 \frac{3}{5}$ in head from snout tip; interorbital $7 \frac{1}{2}$, to 11, low. Gill rakers 3 or 4 + 18 or 19, lanceolate, over twice gill filaments or 3 to 4 in eye.

Scales 49 to 54 in lateral line to caudal base and 3 to 5 more on latter; 4 to 6 above, 5 to 7 below, 11 to 14 predorsal, 2 rows on cheek. Caudal base finely scaled. Scales with 25 to 44 basal circuli; firm apical edge with 6 to 12 little defined minute irregular points.

D. II, 8, I or II, 9, I, first branched ray $1 \frac{1}{3}$ to $1 \frac{2}{3}$ in total head length; adipose fin 4; A. I or II, 6 I to I, 9, I, first branched ray $2 \frac{1}{4}$ to $2 \frac{1}{2}$; caudal $1 \frac{1}{3}$ to $1 \frac{4}{5}$, deeply forked; least depth of caudal peduncle $3 \frac{2}{3}$ to $4 \frac{2}{3}$; pectoral $1 \frac{1}{8}$ to $1 \frac{2}{5}$; ventral $1 \frac{2}{5}$ to $1 \frac{4}{7}$.

Largely pale brown, paler to white below. Iris silvery white. Opercle and sides of head with silvery white reflections. Inside gill opening dusky. Fins pale or uniform brownish.

Atlantic, Pacific and Indian Oceans.

5595. D. 5216. Anima Sola Island, N. 44° W., 29.50 miles (N. 12° 52' E. 123° 23' 30"), between Burias and Luzon. In 19 to 215 fathoms. April 22, 1908. Length 240 mm.

10253. D. 5550. Jolo Light (E.), N. 83° E., 15.5 miles (N. 6° 2' E. 120° 44' 40"), Jolo Island and vicinity. In 258 fathoms. Sept. 17, 1909. Length 270 mm.

10161 U. S. N. M. Europe. C. L. Bonaparte. Academy of Natural Sciences of Philadelphia. Length 121 to 137 mm. 3 examples.

40071 U. S. N. M. Messina. Royal Zool. Mus. Florence. Length 40 to 47 mm. 11 examples.

41600 U. S. N. M. N. 32° W. 77° . Albatross Station 2314. Length 107 to 113 mm. 2 examples.

42101 U. S. N. M. Mus. Hist. Nat. Paris 85 + 70. Length 155 mm.

42102 U. S. N. M. Mus. Hist. Nat. Paris 85 + 71. Length 144 mm.

43826 U. S. N. M. N. 32° W. 77° . Albatross Station 2314. Length 55 to 115 mm. 21 examples.

43827 U. S. N. M. N. 30° W. 79° . Albatross Station 2667. Length 147 mm.

43828 U. S. N. M. N. 37° W. 74° . Albatross Station 2264. Length 60 to 80 mm. 16 examples.

43831 U. S. N. M. N. 39° W. 70° .

Albatross Station 2543. Length 62 to 68 mm. 2 examples.

43832 U. S. N. M. N. 36° W. 74° .

Albatross Station 2425. Length 72 to 79 mm. 2 examples.

43836 U. S. N. M. N. 39° W. 70° .

Albatross Station 2539. Length 100 mm.

43838 U. S. N. M. N. 39° W. 70° .

Albatross Station 2543. Length 60 mm.

43839 U. S. N. M. N. 40° W. 70° .

Albatross Station 2544. Length 63 to 65 mm. 2 examples.

43840 U. S. N. M. N. 28° W. 86° .

Albatross Station 2398. Length 93 to 138 mm. 3 examples.

43841 U. S. N. M. N. 39° W. 70° .

Albatross Station 2543. Length 111 mm.

43852 U. S. N. M. N. 32° W. 77° .

Albatross Station 2624. Length 51 to 153 mm. 3 examples.

43853 U. S. N. M. N. 28° W. 85° .

Albatross Station 2402. Length 70? mm., caudal broken.

46131 U. S. N. M. Albatross Station 2665. Length
118 to 147 mm. 8 examples.

7939 to 7954 A. N. S. P. Italy. C. L. Bonaparte 81.
Dr. T. B. Wilson. Length 75 to 125 mm. Types.

A. N. S. P. Off Tugela River mouth,
Natal. In 200 fathoms. H. W. Bell Marley. Length
140 mm.

Chlorophthalmus proridens Gilbert and Cramer

Chlorophthalmus proridens GILBERT and CRAMER, Proc.

U. S. Nat. Mus., vol. 19, 1896, p. 406, pl. 36,
fig. 2. North Lat. $21^{\circ} 8'$ to $21^{\circ} 9'$, W. Long.

$157^{\circ} 43'$ to $157^{\circ} 53'$, in 298 to 351 fathoms. --

GILBERT, Bull. U. S. Fish Comm., vol. 23, pt. 2,

1903 (1905), p. 589 (Pailolo Channel, off Oahu,

Laysan, Maui and Kauai, 195 to 352 fathoms). --

BRAUER, Deutsch. Tiefsee Exped. Valdivia, vol. 15,

Tiefsee-Fische, 1906, p. 380 (reference). -- FOWLER,

Mem. Bishop Mus., vol. 10, 1928, p. 64 (GILBERT'S

materials).

Depth $5 \frac{1}{4}$ to $6 \frac{4}{5}$; head 3 to $3 \frac{1}{4}$, width $1 \frac{4}{5}$ to 2. Snout $3 \frac{2}{5}$ to $3 \frac{1}{2}$ in head from snout tip; eye $2 \frac{1}{4}$ to $2 \frac{2}{5}$, greater than snout or very narrow interorbital; maxillary reaches $\frac{1}{3}$ to $\frac{2}{5}$ in eye, expansion $2 \frac{1}{3}$ to 3 in eye, length 2 to $2 \frac{1}{5}$ in head from snout tip; interorbital 8 to 10 in eye, low, with deep median groove. Gill rakers 3 + 19 to 21, lanceolate, twice gill filaments or $\frac{1}{3}$ of eye.

Scales 48 to 50 in lateral line to caudal base and 2 or 3 more on latter; 5 above, 5 below, 12 or 13 predorsal, 3 rows on cheek. Scales with 44 or 45 basal radiating circuli; obscure apically; 10 to 12 broad short apical points.

D. II, 8, I to II, 10, I, fin height $1 \frac{1}{2}$ to $2 \frac{1}{8}$? in total head length; adipose fin $5 \frac{1}{5}$ to $8 \frac{7}{8}$; A. II, 7, I or II, 8, I, fin height $2 \frac{1}{5}$ to $3 \frac{1}{3}$; caudal $1 \frac{2}{3}$ to $1 \frac{7}{8}$, forked; least depth of caudal peduncle $4 \frac{3}{5}$ to 5; pectoral $1 \frac{2}{5}$ to $1 \frac{2}{3}$, rays 14 or 15; ventral $1 \frac{3}{5}$ to $1 \frac{7}{8}$? in total head length, rays, 9.

Brownish, under surfaces paler with silvery white tints. All of belly and breast sprinkled with numerous fine dusky close set dots. Head rather pale brown. Iris grayish, with paler shades. Inside gill opening dusky. Fins brownish, front basal part of dorsal and ventral with 3 inner rays and upper part of axil blackish. Caudal dusky basally. Small examples show whole body more or less finely dotted with blackish to dusky, often following in transversely oblique series. Back with 10 dark obscure saddles, variably prominent.

Pacific Ocean.

47697 U. S. N. M. Albatross Station 3475. Length 75 mm.

47715 U. S. N. M. Albatross Station 3476. Length 165? mm., caudal broken. Type. Also 2 paratypes, 104 to 113 mm.

55258 U. S. N. M. Albatross Station. Length 74 to 190 mm. 12 examples.

Chlorophthalmus chalybeius (Goode)

Hyphalonedrus chalybeius GOODE, Proc. U. S. Nat. Mus.,

vol. 3, 1880 (1881), p. 483. Fish Hawk Stations

876 and 878, 120 to 142 fathoms, Gulf Stream. --

JORDAN and GILBERT, Bull. U. S. Nat. Mus., No. 16,

1882, p. 296 (copied).

Chlorophthalmus chalybeius GOODE and BEAN, Oceanic

Ichth., 1896, p. 60, pl. 19, fig. 71 (Gulf Stream,

85 to 167 fathoms). -- JORDAN and EVERMANN, Bull. U.

S. Nat. Mus., No. 47, pt. 1, 1896, p. 542 (compiled).

Chlorophthalmus (Chlorophthalmus) chalybeius PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec.

1928, p. 19 (compiled).

Chlorophthalmus agassizii (not BONAPARTE) GUNTHER, Rep.

Voy. Challenger, vol. 22, 1887, p. 132.

Depth $5 \frac{3}{4}$ to $6 \frac{1}{4}$; head 3 to $3 \frac{1}{2}$, width 2 to $2 \frac{1}{8}$. Snout $3 \frac{1}{3}$ to $3 \frac{1}{2}$ in head from snout tip; eye 2 to $2 \frac{1}{2}$, greatly exceeds snout or very narrow interorbital; maxillary reaches $\frac{1}{4}$ to $\frac{1}{3}$ in eye, expansion $2 \frac{2}{5}$ to $3 \frac{1}{5}$ in eye, Length 2 to $2 \frac{3}{4}$ in head from snout tip; interorbital $8 \frac{1}{2}$ to 9, low, level, narrow bony frenum. Gill rakers 4 ± 19 , lanceolate, slender, 3 in eye, gill filaments $\frac{2}{3}$ gill rakers.

Scales 44 to 47 in lateral line to caudal base and 4 more on latter; 6 above, 6 below, 12 or 13 predorsal forward opposite hind eye edge. Scales with 33 basal circuli, imperfect apically; 12 large broad apical points.

D. II, 9, I, first branched ray $1 \frac{2}{5}$ to $1 \frac{2}{3}$ in total head length; adipose fin 3 to 5; A. II, 6, I, first branched ray 2 to $2 \frac{2}{5}$; caudal $1 \frac{1}{3}$ to $1 \frac{3}{5}$, well emarginate or forked; least depth of caudal peduncle $3 \frac{1}{2}$ to $3 \frac{4}{5}$; pectoral $1 \frac{1}{5}$ to $1 \frac{1}{4}$; ventral $1 \frac{2}{5}$ to $1 \frac{4}{5}$.

Brownish, nearly uniform. Sides with brilliant silvery white reflections. Iris grayish silvery. Fins pale brownish to whitish. Small examples with 10 slightly darker brown saddles on back much broader than paler interspaces.

Atlantic Ocean.

26092 U. S. N. M. Off Block Island. 1880. Length
52 to 108 mm. 7 examples.

28976 U. S. N. M. N. 39° W. 70°

Albatross Station . Length 56 to 70 mm. 7 examples.

28995 U. S. N. M. N. 38° W. 73°

Albatross Station . Length 64 to 70 mm. 2 examples.

29062 U. S. N. M. Fish Hawk Station . Length
69 to 93 mm. 8 examples.

31644 U. S. N. M. N. 40° W. 70°

Length 61 to 66 mm. 2 examples.

43829 U. S. N. M. N. 37° W. 74°

Albatross Station 2420. Length 49 to 59 mm. 2 examples.

43830 U. S. N. M. N. 36° W. 74°

Albatross Station 2424. Length 60 to 61 mm. 2 examples.

43931 U. S. N. M. N. 36° W. 74°

Albatross Station 2425. Length 55 to 92 mm. 5 examples.

43833 U. S. N. M. N. 39° W. 70°

Albatross Station 2536. Length 52 to 62 mm. 2 examples.

43834 U. S. N. M. N. 39° W. 70°

Albatross Station 2536. Length 64 to 66 mm. 2 examples.

43836 U. S. N. M. N. 39° W. 70°

Albatross Station 2537. Length 72 mm.

91404 U. S. N. M. Albatross Station 20035. In 86
fathoms. December 9, 19 . Length 55 mm.

Chlorophthalmus nigripinnis Günther

Chlorophthalmus nigripinnis GÜNTHER, Ann. Mag. Nat.

Hist., ser. 5, vol. 2, 1878, p. 182. Off Twofold Bay, New South Wales, in 120 fathoms. -- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 6, 1881, p. 221 (copied). -- GÜNTHER, Rep. Voy. Challenger, vol. 22, 1887, p. 193, pl. 51a (types). -- WAITE, Proc. New Zealand Instit., 1910, p. 25 (); Records Canterbury Mus., vol. 1, 1911, p. 164, pl. 25 (). -- MC CULLOCH, Zool. Res. Endeavour, vol. 1, pt. 1, Dec. 22, 1911, p. 22 (Tasmania, Bass Strait, New South Wales). -- WAITE, Records Canterbury Mus., vol. 1, No. 4, Dec. 28, 1912, p. 317 (reference). -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 20 (discussion).

Chlorophthalmus nigripinnis WAITE, Mem. Austral. Mus.,
vol. 4, 1899, p. 54, text fig. 4 (tail) (New South
Wales, 40 to 150 fathoms).

Chlorophthalmus mento GARMAN, Mem. Mus. Comp. Zool.,
vol. 24, 1899, p. 253, pl. 54, figs. 1-1c. N. 78°
32' 36" W. 79° 16', 286 fathoms, N. 7° 33' 12" W.
79° 17' 15", 242 fathoms; N. 7° 16' 45" E. 79° 56'
30", 210 fathoms).

Chlorophthalmus albatrossis JORDAN and STARKS, Bull. U.
S. Fish Comm., vol. 22, 1902 (1904), p. 579, pl. 1,
fig. 1. Sagami Bay, Japan, in 153 fathoms; Suruga
Bay, in 65 to 125 fathoms. -- FRANZ, Abh. Kön. Bayer.
Akad. Wiss., vol. 4, Suppl. Band 1, 1910, p. 21
(Fukuura).

Chlorophthalmus punctatus GILCHRIST, Marine Invest.

South Africa, vol. 3, 1905, p. 15. Lion's Head,
bearing N. 63° E. distant 34 miles, in 154 fathoms.

(Error.)

Chlorophthalmus punctatus GILCHRIST, Marine Invest. South

Africa, vol. 3, 1905, pl. 35. -- GILCHRIST and VON BONDE,

Fisher. Marine Biol. Surv. Rep., No. 3, 1922 (1924),

p. 7 (Natal coast and off Delagoa Bay, 175 to 240

fathoms). -- BARNARD, Ann. South African Mus., vol.

21, pt. 1, 1925, p. 230 (compiled).

Depth $4 \frac{1}{2}$ to 6; head 3 to $3 \frac{1}{3}$, width $1 \frac{3}{4}$ to 2. Snout $3 \frac{1}{4}$ to $3 \frac{1}{2}$ in head from snout tip; eye $2 \frac{1}{2}$ to $2 \frac{3}{5}$, greatly exceeds snout or narrow interorbital; maxillary reaches $\frac{1}{3}$ to $\frac{2}{5}$ in eye, expansion $2 \frac{2}{3}$ to 3 in eye, length $2 \frac{1}{5}$ to $2 \frac{1}{3}$ in head from snout tip; interorbital $7 \frac{3}{4}$ to $8 \frac{1}{2}$, low, narrow, bony constriction. Gill rakers $3 + 18$, lanceolate, longest slightly longer than gill filaments or $\frac{1}{4}$ of eye.

Scales 44 to 50 in lateral line to caudal base and 3 or 4 more on latter; 6 above, 5 below, 14 predorsal forward opposite hind eye edge. Scales with 39 or 40 basal radiating circuli, incomplete apically; 11 or 12 broad short apical points.

D. II, 9, I, first branched ray $1 \frac{1}{3}$ to $1 \frac{2}{5}$ in total head length; adipose fin 4 to $4 \frac{1}{3}$; A. II, 7, I, first branched ray $2 \frac{3}{5}$ to $2 \frac{7}{8}$; caudal $1 \frac{3}{5}$?, widely forked; least depth of caudal peduncle $3 \frac{7}{8}$ to 4; pectoral $1 \frac{1}{10}$ to $1 \frac{1}{8}$; ventral $1 \frac{2}{5}$ to $1 \frac{1}{2}$.

Olivaceous brown, dusted everywhere with dark or blackish fine dots. Scales anteriorly below and abdomen with silvery sheen. Pectoral **axil** blackish brown. Iris neutral gray. Inside gill opening dusky. Fins brownish, inner ventral rays blackish. Small examples with 10 obscure underlaid dark saddles or blotches on back.

Pacific and Indian Oceans.

51446 U. S. N. M. Albatross Station 3698. In 153 fathoms. Length 168? mm. Type of Chlorophthalmus albatrossis.

51447 U. S. N. M. Albatross Station . Length 117 to 132 mm. 2 examples.

57848 U. S. N. M. Albatross Station 3389. Length 160 to 164 mm. 2 examples. As Chlorophthalmus mento.

Chlorophthalmus truculentus Goode and Bean

Chlorophthalmus truculentus GOODE and BEAN, Oceanic

Ichth., 1895, p. 61, pl. 19, fig. 72. Blake Station
LII, 158 fathoms, off Barbadoes. -- JORDAN and EVER-
MANN, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p.
542 (copied).

Chlorophthalmus (Parasudis) truculentus PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec.
1928, p. 18 (reference).

Parasudis truculentus REGAN, Ann. Mag. Nat. Hist., ser.

8, vol. 7, 1911, p.

Depth $4 \frac{1}{3}$ to $4 \frac{3}{4}$; head 3 to $3 \frac{1}{5}$, width 2 to $2 \frac{2}{3}$. Snout $2 \frac{1}{4}$ to $2 \frac{1}{2}$ in head from snout tip; eye 3 to $3 \frac{3}{5}$, $1 \frac{1}{5}$ to $1 \frac{1}{4}$ in snout, greatly exceeds narrow interorbital; maxillary reaches $\frac{7}{8}$ to $\frac{9}{10}$ in snout, expansion $2 \frac{4}{5}$ to 3 in eye, length $2 \frac{3}{5}$ to $2 \frac{3}{4}$ in head from snout tip; interorbital $8 \frac{1}{2}$ to $9 \frac{1}{4}$, low. Gill rakers 2 + 11, lanceolate, slightly less than gill filaments, which $2 \frac{4}{5}$ in eye.

Scales 50 to 60 in lateral line to caudal base and 4 or 5 more on latter; 6 above, 6 or 7 below, 14 to 16 predorsal forward to eyes. Scales with 40 to 41 basal circuli, not extending apically; 12 to 16 short apical points.

D. II, 8, I, first branched ray $1 \frac{1}{2}$ to 2 in total head length; adipose fin $4 \frac{1}{2}$ to 6; A. II, 7, I, first branched ray $2 \frac{1}{3}$ to $2 \frac{2}{5}$; caudal $1 \frac{1}{4}$ to $1 \frac{2}{5}$, forked; least depth of caudal peduncle $4 \frac{1}{5}$ to $4 \frac{2}{5}$; pectoral $1 \frac{2}{5}$ to $1 \frac{1}{2}$; ventral $1 \frac{1}{2}$ to 2.

Brown above, paler below, though some specimens more or less uniform brownish. Side usually with silvery tints and under surface usually white. Iris silvery white to gray. Fins pale to whitish.

Atlantic Ocean.

44416 U. S. N. M. Albatross Station 2125. Length
235 mm. As Chlorophthalmus chalybaeus.

92047 U. S. N. M. South of Tortugas. Prof. W. H.
Longley. Length 156 to 167 mm. 4 examples. As
Chlorophthalmus chalybaeus.

Genus Bathysauropsis Regan

Bathysauropsis REGAN, Ann. Mag. Nat. Hist., ser. 8,
vol. 7, 1911, p. 126. Type Chlorophthalmus gra-
cilis GUNTHER, monotypic.

Body elongate, subcylindrical or compressed, Head depressed. Snout more or less spatulate. Eye moderately large, less than snout. Mouth large. Maxillary extends beyond eye. Teeth in coarsely villiform bands in jaws, uniserial on vomer and palatines; vomerine series interrupted medially; few minute teeth on tongue. Interorbital wider than vertical eye diameter. Branchiostegals 10. Pyloric appendages 2. No air bladder. Scales cycloid, regularly arranged. Lateral line completely axial. Fin rays not prolonged. Ventral before dorsal.

Bathysauropsis gracilis (Günther)

Chlorophthalmus gracilis GÜNTHER, Ann. Mag. Nat. Hist., ser. 5, vol. 2, 1878, p. 182. Off Eastern coast of New Zealand, off Juan Fernandez, middle of South Atlantic, in 1100, 1375, 1425 fathoms; Rep. Voy. Challenger, vol. 22, 1887, p. 194, pl. 49, fig. A. (types). -- GOODE and BEAN, Oceanic Ichth., 1895, p. 511 (copied). -- WAITE, Records Canterbury Mus., vol. 1, No. 1, April 25, 1907, p. 13 (reference). -- GILCHRIST, Marine Invest. South Africa, vol. 4, 1906, p. 165 (off Cape Point, 755 fathoms). -- THOMPSON, Marine Biol. Rep. South Africa, vol. 3, 1916, p. 82 (off South Africa). -- GILCHRIST and VON BONDE, Marine Biol. Rep. South Africa, No. 3, 1924, p. 7 (off Cape Point and Table Bay, 600 to 1220 fathoms).

Bathysauropsis gracilis WAITE, Records Canterbury

Mus., vol. 1, No. 4, Dec. 28, 1912, p. 317 (reference). -- BARNARD, Ann. South African Mus., vol. 21, pt. 1, 1925, p. 230 (off Cape Point and Table Bay, 475 to 1220 fathoms). -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, Art. 3, Dec. 1928, p. 18 (compiled).

Depth $7 \frac{1}{2}$; head $3 \frac{3}{4}$, width 2. Snout $3 \frac{1}{2}$ in head from snout tip; eye $4 \frac{2}{3}$, $1 \frac{1}{4}$ in snout, equal interorbital; maxillary extends $\frac{1}{3}$ eye diameter behind eye, expansion $1 \frac{7}{8}$ in eye, length $1 \frac{7}{8}$ in head from snout tip; interorbital $4 \frac{2}{3}$, flat. Gill rakers close set, needle shaped, long as eye.

Scales 60 in lateral line; 6 above, 4 below.

D. III, 8, I, first branched ray $1 \frac{1}{2}$ in total head Length; adipose fin 7; A. III, 9, I, first branched ray 3; caudal $1 \frac{1}{3}$; least depth of caudal base $5 \frac{1}{4}$; pectoral $1 \frac{1}{5}$; ventral 2, outer rays sometimes dilated.

Uniformly blackish brown, fins lighter. Length 242 mm.
(Günther.)

Southern Atlantic and Pacific Oceans.

Genus Notosudis Waite

Notosudis Waite, Australasian Antarctic Exped., Sci.

Rep., ser. C, Zool. Bot., vol. 3, pt. 1, June 30,

1916, p. 56. Type Notosudis hamiltoni Waite, monotypic.

Body well elongated, subcylindrical. Head wide as deep, rather large, conic. Snout long, pointed. Eye moderate, less than snout. Maxillary extends well behind eye. Supplemental maxillary present. Mandible protrudes. Teeth uniserial in jaws, on palatines and narrow band on ventral. Opercles thin, unarmed. Gill membranes free from isthmus. No pseudobranchiae. Branchiostegals 10. Scales? Lateral line axial, apparently complete. Dorsal origin median in body without caudal. Adipose fin inserted behind anal base. Anal far postmedian, short. Caudal small, forked. Pectoral placed median in body depth. Ventral?

Notosudis hamiltoni Waite

Notosudis hamiltoni WAITE, Australasian Antarctic

Exped., Sci. Rep., ser. C, Zool. Bot., vol. 3, pt.

1, June 30, 1916, p. 57, text fig. 12 (outline of head above), pl. 5, fig. 2. Macquarie Island. --

PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 22 (reference).

Depth $8 \frac{1}{3}$; head $4 \frac{1}{4}$, width $2 \frac{1}{2}$. Snout $3 \frac{1}{4}$ in head from snout tip; eye $5 \frac{2}{5}$, $1 \frac{3}{4}$ in snout, $1 \frac{1}{5}$ in interorbital; maxillary extends half an eye diameter behind eye, expansion $1 \frac{2}{3}$ in eye, length $1 \frac{3}{4}$ in head from snout tip; interorbital $4 \frac{2}{5}$, level. Gill rakers 0 + 20, needle like spines.

Scales if present all lost in type except some tubular ones forming part of course of lateral line, these medial on side of tail.

D. 12, fin base 3 in total head; adipose fin $5 \frac{1}{2}$;
A. 15, fin base $3 \frac{7}{8}$; caudal $2 \frac{1}{8}$?, well forked; least
depth of caudal peduncle $5 \frac{1}{5}$; paired fins damaged.

Length 505 mm.

(Waite.)

Macquarie Island.

Genus Benthosaurus Goode and Bean

Benthosaurus GOODE and BEAN, Bull. Mus. Comp. Zool.,
vol. 12, 1886, No. 5, p. 168. Type Benthosaurus
grallator GOODE and BEAN, monotypic.

Body elongate, tapers back to rather long slender caudal peduncle. Head slightly depressed. Eye very small, inconspicuous. Mouth cleft wide, horizontal, lower jaw protruding. Maxillary long, not stout, expanded posteriorly. Premaxillaries and mandible with bands of small uniform teeth; short oblong band each side of vomer, interspace rather wide; palatines and tongue smooth. Gill opening very wide, membranes free from isthmus. Gill rakers long, slender, numerous. Pseudobranchiae present. Branchiostegals 11. Scales cycloid, moderate. Lateral line axial, complete. Dorsal median. No adipose fin. Anal postmedian. Caudal forked, lowest ray produced. Pectoral inserted rather high. Ventral rays 7, inserted midway in space between pectoral and ventral, outer or lower produced ray reaches beyond caudal.

Benthosaurus grallator Goode and Bean

Benthosaurus grallator GOODE and BEAN, Bull. Mus. Comp.

Zool., vol. 12, 1886, No. 5, p. 168. N. $24^{\circ} 33'$

W. $84^{\circ} 23'$, 1850 fathoms; Oceanic Ichth., 1895, p.

62, pl. 19, fig. 73 (type; N. $39^{\circ} 3' 15''$ W. $70^{\circ} 50'$

$45''$, 1537 fathoms). -- JORDAN and EVERMANN, Bull. U.

S. Nat. Mus., No. 47, pt. 1, 1896, p. 543 (copied).

-- MURRAY and HJORT, Depths of the Ocean, 1912, p.

396 (N. $34^{\circ} 59'$ W. $33^{\circ} 1'$, 2615 to 2865 meters). --

PARR, Bull. Bingham Oceanogr. Collection, vol. 3,

art. 3, Dec. 1928, p. 23 (compiled).

Depth $5 \frac{3}{4}$ to $7 \frac{1}{5}$; head $3 \frac{1}{2}$ to $3 \frac{3}{4}$, width $2 \frac{3}{5}$ to $2 \frac{3}{4}$. Snout $3 \frac{1}{4}$ to $3 \frac{3}{5}$ in head from snout tip; eye 20 to 22, $4 \frac{3}{4}$ to $6 \frac{1}{2}$ in snout, $7 \frac{1}{5}$ to 8 in interorbital; maxillary extends $9 \frac{1}{2}$ eye diameters behind eye, expansion equals $1 \frac{1}{2}$ to $1 \frac{4}{5}$ eye diameters, length $1 \frac{2}{5}$ in head from snout tip; interorbital 3 to $3 \frac{2}{5}$, low, broadly convex. Gill rakers $9 + 25$, finely lanceolate, slender, 4 times eye; gill filaments $\frac{3}{5}$ gill rakers.

Scales 50 to 53 in lateral line to caudal base and 5 to 7 more on latter; 9 above, 8 or 9 below, 29 to 36 predorsal forward opposite front eye edge. Scales very caducous, most all fallen. Scales cycloid, with fine basal circuli, obsolete apically.

D. II, 10, I to II, 12, I, first branched ray $1 \frac{1}{3}$ to $1 \frac{3}{5}$ in total head length; A. II, 12, I, first branched ray $1 \frac{2}{5}$ to $1 \frac{1}{2}$; least depth of caudal peduncle 4 to $4 \frac{1}{5}$; upper caudal lobe $1 \frac{1}{8}$ to $1 \frac{1}{4}$, lower terminal filament $1 \frac{1}{6}$ in rest of body; pectoral $2 \frac{3}{4}$ to 3, rays 9; ventral rays 7, first greatly prolonged beyond tip of caudal filament, equal body without caudal or $1 \frac{1}{8}$ in same.

Body blackish brown. Small eye grayish. Head brownish anteriorly, opercles blackish. Mouth roof, inside branchiostegal membranes and opercle black. Fins whitish.

Atlantic Ocean.

35651 U. S. N. M. N. $39^{\circ} 3' 15''$ W. $70^{\circ} 50' 45''$. In 1537 fathoms. Albatross Station 2222. Length 316 mm. to end of upper caudal lobe.

44675 U. S. N. M. Albatross Station 2571. Length 295 mm. to end of upper caudal lobe.

Genus Bathypterois Günther

Bathypterois GÜNTHER, Ann. Mag. Nat. Hist., ser. 5,

vol. 2, 1878, p. 183. Type Bathypterois longifilis

GÜNTHER, Designated by JORDAN, Genera of Fishes, pt.

3, 1919, p. 395.

Synapteretmus GOODE and BEAN, Oceanic Ichth., 1895, p.

64. Type Bathypterois quadrifilis GÜNTHER, designated

by JORDAN, Stanford Univ. Public., Univ. Ser. Biol.

Sci., (class. Fishes), vol. 3, No. 2, 1923, p. 154.

Hemipterois REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7,

1911, p. 127. Type Bathypterois guentheri ALCOCK,

orthotypic.

Belonepterois ROULE, Bull. Inst. Oceanogr. Monaco, No.

320, 1916, p. 13. Type Belonepterois viridescens

Roule, monotypic.

Chas. H. Hall

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July 1888

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Stomator
Synbranch
Diplo
Pteron
Lycopodium

Brachypterois JORDAN and SEALE, Bull. Bur. Fisher.,

vol. 25, 1905 (1906), p. 189. Type Bathypterois

longifilis GUNTHER. (Misprint for Bathypterois.)

Body elongate, compressed. Head depressed forward. Snout and forehead broad, depressed. Eyes very small. Mouth cleft wide, mandible protruding. Teeth in villiform bands in jaws, 2 patches on vomer, none on palatines or tongue. Scales thin, adherent, moderate. Dorsal moderate. Adipose dorsal usually present. Anal short, not longer than dorsal. Caudal rather large. Pectoral rays arranged in 2 distinctly separated groups, as upper and lower, upper ones of upper group greatly prolonged. Ventral premedian.

Analysis of species

a¹. Bathypterois. Upper group of pectoral rays
4 or less.

b¹. Lower edge of caudal basally with distinct
or prominent notch.

c¹. Anal origin well behind end of dorsal.

dubuis.

c². Anal origin below dorsal base or immediately behind vertical from its termination.

d¹. Head 5 1/2; lower caudal rays with
swollen tips but slightly shorter
than upper rays.

ater.

d². Head less than 5; lower caudal lobe
more or less longer than upper,
often with separately produced rays.

atricolor.

b². Lower edge of caudal without notch.

e¹. Anal origin below middle of dorsal.

longipes.

e². Anal origin below end of dorsal fin
base of posterior.

- f¹. Lower group of pectoral rays 9, lower ray in lower group produced like upper ray in upper group; snout 3 in head; scales 59 in lateral line; outer ventral rays moderately produced; lower caudal rays not produced. quadrifilis.
- f². Lower group of pectoral rays 12 and longest pectoral ray not produced; snout $2 \frac{3}{5}$ in head; outer ventral and lower caudal rays moderately produced. filiferus,
- f³. Lower group of pectoral rays 12 or 13 and lower pectoral rays not produced; snout 3 in head; scales 48 to 51; outer ventral and lower caudal rays moderately produced. insularum.
- e². Anal origin well behind end of dorsal; lower group of pectoral rays 13; scales 61 in lateral line; anal origin well behind end of dorsal; outer ventral rays not produced, tips dilated. longifilis.

a². Hemipterois. Upper group of pectoral rays 6 or more; lower caudal edge not notched; outer ventral and lower caudal rays strongly produced.

g¹. Two upper rays of upper pectoral group detached, rigid and enormously produced; anal origin just behind end of dorsal.

guntheri.

g². Two upper pectoral rays rudimentary or absent, all in upper group united by stout fin membrane and none reaching past dorsal; anal origin under middle of dorsal fin base.

viridescens.

Bathypterois dubius Vaillant

Bathypterois dubius VAILLANT, Exped. Sci. Travailleux et

Talisman, Poiss., 1888, p. 124, pl. 9, figs. 1, a-f,

pl. 12, figs. 4-a, pl. 14, fig. 4, pl. 15, figs. 4,

a-b. Coasts of Morocco, Canaries, Soudan, Banc d'

Arguin, Azores, 834 to 1635 meters. -- GOODE and

BEAN, Oceanic Ichth., 1895, p. 64, pl. 20, fig. 74

(copied). -- COLLETT, Res. Camp. Sci. Monaco, vol.

10, 1896, p. 105, pl. 4, fig. 19 (N. $39^{\circ} 18' 5''$ W.

$33^{\circ} 22' 15''$, 1372 meters; N. $39^{\circ} 22' 48''$ W. $33^{\circ} 45'$

$30''$, 1384 meters; N. $38^{\circ} 33' 21''$ W. $30^{\circ} 28' 54''$,

1300 meters; Azores). -- ZUGMAYER, Res. Camp. Sci.

Monaco, vol. 35, 1911, p. 16 (N. $45^{\circ} 9'$ W. $3^{\circ} 18'$,

1804 meters; N. $40^{\circ} 5'$ W. $9^{\circ} 54'$, 1241 meters, off

Portugal). -- MURRAY and HJORT, Depth of the Ocean,

1912, p. 396, fig. 266 (N. $35^{\circ} 32'$ W. $7^{\circ} 7'$, 1215

meters; N. $28^{\circ} 8'$ W. $13^{\circ} 35'$, 1365 meters).

-- ROULE, Res. Camp. Sci. Monaco, vol. 52, 1919, p.
34 (N. $38^{\circ} 20'$ W. $28^{\circ} 4' 45''$, 1550 meters; N. 16°
 $34'$ W. $23^{\circ} 3' 15''$, 1477 meters; N. $38^{\circ} 40'$ W. 26°
 $00' 45''$, 1805 meters; Azores). -- VAILLANT, Res.
Camp. Sci. Monaco, vol. 52, 1919, p. 130 (N. 38°
 $26'$ W. $26^{\circ} 30' 45''$, 1165 meters; N. $37^{\circ} 42' 40''$ W.
 $25^{\circ} 5' 15''$, 1385 meters; N. $39^{\circ} 22'$ W. $26^{\circ} 55' 45''$,
1940 meters; Azores). -- PARR, Bull. Bingham Oceanogr.
Collection, vol. 3, art. 3, Dec. 1928, p. 26 (compiled).

Bathypterois pectoralis GARMAN, Mem. Mus. Comp. Zool.,
vol. 24, 1899, p. 257, pl. K, fig. 1. N. 23° to S. 0° ,
W. 79° to 108° , 885 to 1132 fathoms.

Depth $7 \frac{1}{2}$ to $7 \frac{3}{4}$; head $4 \frac{1}{3}$ to $4 \frac{3}{4}$, width $2 \frac{1}{5}$ to $2 \frac{1}{4}$. Snout 3 to $3 \frac{1}{4}$ in head from snout tip; eye 8 to 15, $2 \frac{3}{4}$ to $4 \frac{4}{5}$ in snout, $4 \frac{2}{5}$ to 6 in interorbital; maxillary extends $2 \frac{1}{3}$ to $4 \frac{1}{2}$ eye diameters behind eye, expansion 1 to $1 \frac{1}{4}$ times eye, length $1 \frac{1}{2}$ to $1 \frac{3}{5}$ in head; interorbital $2 \frac{3}{5}$ to $2 \frac{4}{5}$, low, broadly convex. Gill rakers $13 + 30$, finely lanceolate, 4 times eye; gill filaments $\frac{3}{4}$ of gill rakers.

Scales 59 in lateral line to caudal base and 3 more on latter; 6 above, 7 below, 27 predorsal forward opposite front of eye. Scales all very caducous, most all fallen. Scales with 14 or 15 complete circuli.

D. II, 12, I to II, 14, first branched ray 1 to $1 \frac{1}{5}$ in total head length; adipose fin $4 \frac{3}{4}$ to $5 \frac{1}{4}$, inserted midway between last third or fourth of dorsal base and caudal base; A. I, 8, ~~I~~ or I, 9, I, first branched ray $1 \frac{1}{4}$ to $1 \frac{2}{5}$, fin origin close behind base of last dorsal ray; caudal 4 to $4 \frac{1}{3}$ in rest of body, lower lobe longer and fin deeply forked, with notch at lower rudimentary rays; pectoral with uppermost ray reaching caudal base or beyond and bifid at least for last fifth, other rays 11 and longest reach anal; ventral $2 \frac{3}{5}$ to $2 \frac{3}{4}$ in body without caudal, reach to or little beyond depressed anal.

Body blackish brown. Iris gray. Front of head all more or less paler than posteriorly. Inside gill opening blackish. Fins more or less whitish.

Atlantic and Pacific Oceans.

42087 U. S. N. M. Mus. Hist. Nat. Paris 85 + 114.

Length 165 mm.

42088 U. S. N. M. Mus. Hist. Nat. Paris 85 + 113.

Length 158 mm.

57888 U. S. N. M. Albatross Station 3376. Length 213

mm. As Bathypterois pectoralis.

Bathypterois ater Gilchrist

Bathypterois ater GILCHRIST, Marine Invest. South

Africa, vol. 4, 1906, p. 167, pl. 49. Off Cape

Point, in 900 fathoms. -- BARNARD, Ann. South African

Mus., vol. 21, June 1925, p. 234, pl. 9, fig. 6

(copied). -- PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. 26 (compiled).

Depth $5 \frac{1}{2}$; head $4 \frac{7}{8}$. Snout $3 \frac{2}{5}$ in head from snout tip; eye $10 \frac{3}{4}$, 3 in snout; maxillary extends 3 eye diameters behind eye, expansion equal to $1 \frac{1}{2}$ eye diameters, length $1 \frac{3}{5}$ in head from snout tip; interorbital $2 \frac{1}{2}$, rather high.

Scales 63 in lateral line to caudal base and 3 more on latter, 5 above, 4 below.

D. 14, second ray $1 \frac{1}{10}$ in total head; adipose fin $4 \frac{3}{4}$; A. 8, first ray $1 \frac{1}{3}$; least depth of caudal peduncle $2 \frac{4}{5}$; caudal $4 \frac{1}{4}$ in rest of body, upper lobe little longer and lobes rounded, with notch at lower rudimentary rays; P. rays $2 + 8$, upper $1 \frac{3}{5}$ times body without caudal, bifurcating opposite adipose fin with aftershaft $1 \frac{3}{4}$ in rest of ray, other rays reach middle of body; ventral $3 \frac{1}{2}$ in body without caudal, 2 outermost rays little extended and reach middle of anal.

Dark or dark brown. Head blackish. Length 162? mm..

(Gilchrist.)

South Africa.

Bathypterois atricolor Alcock

Bathypterois atricolor ALCOCK, Journ. Asiatic Soc.

Bengal, vol. 65, pt. 2, Oct. 7, 1896, p. 306.

Laccadive Sea, in 891 fathoms; p. 332 (reference);

Illustrat. Zool. Investigator, Fishes, pt. 4, 1897,

pl. 17, fig. 6; Ann. Mag. Nat. Hist., ser. , Aug.

1889, p. 146 (Cat. Deep Sea Fishes Indian Mus., 1899,

p. 158, Arabian Sea, near the Laccadives, Maldives,

and C. Comorin, 891, 459, 824 fathoms). -- REGAN, Ann.

Mag. Nat. Hist., ser. 8, vol. 7, 1911, p. ().

-- PARR, Bull. Bingham Oceanogr. Collection, vol. 3,

art. 3, Dec. 1928, p. 26 (reference).

Bathypterois (Bathypterois) atricolor PARR, Bull. Bing-

ham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,

p. 30 (Atlantic Materials; discussion).

Bathypterois ventralis GARMAN, Mem. Mus. Comp. Zool.,

vol. 24, 1899, p. 256, pl. 55, fig. 1. N. Lat. 16°
to 21° W. Long. 99° 106° , in 660 to 680 fathoms (off
Western Mexico).

Bathypterois antennatus GILBERT, Bull. U. S. Fish Comm.,

vol. 23, pt. 2, 1903 (1905), p. 590, figs. 235. Vic-
inity of Bird Island, depth 313 to 800 fathoms;
vicinity of Kauai, depth 1000 to 1314 fathoms. --
REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, 1911, p.

Bathypterois atricolor indicus BRAUER, Deutsch. Tiefsee

Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p.
144 (380), pl. 11, fig. 1. N. Lat. 1° $48'$ $2''$ E. Long.
 45° $42'$ $5''$, in 1644 mm. (Off North East Africa.)

Bathypterois atricolor phenax PARR, Bull. Bingham Ocean-

ogr. Collection, vol. 3, art. 3, Dec. 1928, p. 31. N.
Lat. 21° $16'$ W. Long. 71° $18'$, in 900 to 945 fathoms.

Bathypterois longifilis (not GÜNTHER) FOWLER, Mem. Bishop

Mus., vol. 10, 1928, p. 66 (on GILBERT).

Depth $6 \frac{7}{8}$ to $7 \frac{1}{2}$; head $3 \frac{3}{4}$ to $4 \frac{3}{5}$, width $2 \frac{1}{5}$ to $2 \frac{1}{3}$. Snout $2 \frac{7}{8}$ to $3 \frac{1}{8}$ in head from snout tip; eye $10 \frac{1}{2}$ to 13, $3 \frac{1}{5}$ to $4 \frac{1}{4}$ in snout, 4 to $6 \frac{1}{4}$ in inter-orbital; maxillary extends $2 \frac{2}{3}$ to $3 \frac{1}{2}$ eye diameters behind eye, expansion equals $1 \frac{1}{4}$ to 2 eye diameters, length $1 \frac{1}{2}$ to $1 \frac{3}{5}$ in head from snout tip; interorbital $2 \frac{1}{2}$ to $2 \frac{7}{8}$, low, broadly convex. Gill rakers 14 + 33 to 34, lanceolate, slender, slightly exceed gill filaments or equal $2 \frac{2}{3}$ eye diameters.

Scales 47 to 52 in lateral line to caudal base and 3 or 4 more on latter; 5 or 6 above, 8 below, 26 to 30 predorsal forward opposite front of eyes. Scales very caducous, most all fallen. Scales with 28 to 30 circuli basally, more or less complete though fewer apically.

D. II, 10, I to II, 13, I, first branched ray $1 \frac{1}{5}$ to $1 \frac{1}{3}$ in total head length; adipose fin $3 \frac{7}{8}$ to $4 \frac{1}{8}$; A. II, 8, I, first branched ray $1 \frac{2}{5}$ to $1 \frac{1}{2}$; least depth of caudal peduncle $2 \frac{4}{5}$ to 3; caudal 3 to 4 in rest of body, deeply lunate, pectoral with upper ray extending at least far as end of caudal?, with long aftershaft given off little before middle, rest of rays 10 or 11, longest reaching anal fin; ventral $2 \frac{1}{5}$ to $3 \frac{3}{5}$ in body without caudal, rays 9, extend beyond anal fin in young.

Dark brown to blackish brown. Inside mouth, gill opening and peritoneum blackish. Iris grayish. Pectoral filaments and tips of ventral **rays** white.

Atlantic, Pacific and Indian Oceans. Two western Pacific specimens show the adipose fin much more advanced than Hawaiian. All have a notch in the profile of the lower rudimentary caudal **rays**.

2746. D. 5439. Hermana Mayer Light, S. 33° E., 12.6 miles (N. $15^{\circ} 58' 15''$ E. $119^{\circ} 40' 20''$), west coast of Luzon. In 940 fathoms. May 9, 1909. Length 210 mm.

4231. D. 5655. Cape Tabako, N. 7° E., 13 miles (S. $3^{\circ} 34' 10''$ E. $120^{\circ} 50' 30''$), Gulf of Boni. In 608 fathoms. December 18, 1909. Length 183 mm.

D. 5615. Tifore Island (C.) N. 40° W., 35 miles (N. $0^{\circ} 32' 30''$ E. $126^{\circ} 31' 30''$), Molucca Passage. In 1021 fathoms. November 22, 1909. Length 191 mm.

51640 U. S. N. M. Vicinity Bird Island, Hawaii. Albatross Station 4151. Length 165 mm. Type of Bathypterois antennatus.

57887 U. S. N. M. Gulf of Panama. Albatross Station 3418. Length 132 mm.

Bathypterois longipes Günther

Bathypterois longipes GÜNTHER, Ann. Mag. Nat. Hist.,

ser. 5, vol. 2, 1878, p. 184. Off east coast of South America, in 2650 fathoms; Rep. Voy. Challenger, vol. 22, 188, p. 188, pl. 48, fig. A (types).

-- GOODE and BEAN, Oceanic Ichth., 1895, p. 66, fig. 76 (Atlantic specimens, 539 to 955 fathoms).

MURRAY and HJORT, Depths of the Ocean, 1912, p. 396

(N. $34^{\circ} 59'$ W. $33^{\circ} 1'$, 2615 to 2865 meters). -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 26 (compiled).

Bathypterois longicauda GÜNTHER, Ann. Mag. Nat. Hist.,

ser. 5, vol. 2, 1878, p. 184. Middle of South Pacific, in 2550 fathoms; Rep. Voy. Challenger, vol. 22, 1887, p. 188, pl. 26, fig. B (type). -- GOODE and BEAN, Oceanic Ichth., 1895, p. 64 (reference).

Bathypterois longifilis (not GÜNTHER) FOWLER, Mem. Bishop

Mus., vol. 10, 1928, p. 66 (part).

Depth $7 \frac{1}{4}$ to 9; head $4 \frac{1}{4}$ to 5, width $2 \frac{1}{10}$ to $2 \frac{1}{5}$. Snout 3 to $3 \frac{1}{2}$ in head from upper jaw tip; eye 8 to $9 \frac{1}{2}$, $1 \frac{4}{5}$ to 6 in snout, $2 \frac{4}{5}$ to $7 \frac{3}{4}$ in interorbital; maxillary extends 5 eye diameters behind eye, expansion equals 2 eye diameters, length $1 \frac{1}{2}$ to $1 \frac{4}{5}$ in head from upper jaw tip; interorbital $2 \frac{4}{5}$ to 3, low, broadly convex. Gill rakers 11 + 30, finely lanceolate, 4 times eye and twice gill filaments.

Scales 55 to 60 in lateral line to caudal base and 3 or 4 more on latter; 6 above, 7 or 8 below, 30 predorsal forward opposite eyes. Scales very caducous, most all fallen. Scales with 45 circuli basally, usually obsolete apically.

D. II, 12 or II, 13, I, first branched ray $1 \frac{1}{8}$ to $1 \frac{1}{5}$ in total head; adipose fin $7 \frac{3}{4}$ to $8 \frac{1}{2}$, origin midway between caudal base and base of last dorsal ray; A. I, 8, first branched ray $1 \frac{1}{4}$; least depth of caudal peduncle $3 \frac{3}{4}$; caudal $3 \frac{1}{4}$ to $3 \frac{2}{3}$ in rest of body; pectoral rays 2-7 or 8, uppermost reaches caudal tip, gives off aftershaft last $\frac{2}{5}$ its length, other rays reach far as dorsal fin origin; ventral rays 8, first or simple ray $2 \frac{4}{5}$ to $2 \frac{7}{8}$ in combined head and body to caudal base.

Blackish brown. Iris gray. Inside gill opening white. Head anteriorly brownish, opercle blackish. Fins white.

Atlantic and Pacific Oceans.

31804 U. S. N. M. N. 39° W. 72° . Fish Hawk
Station . Length 76 mm.

35635 U. S. N. M. Albatross Station 2225. Length
209 mm.

47614 U. S. N. M. N. $25^{\circ} 30'$ W. $84^{\circ} 35'$. In 539
fathoms. Blake Station CXCI. Length 59 mm.

Bathypterois quadrifilis Günther

Bathypterois quadrifilis GÜNTHER, Ann. Mag. Nat. Hist.,
ser. 5, vol. 2, 1878, p. 184. Off coast of Brazil,
770 fathoms; Rep. Voy. Challenger, vol. 22, 1887,
p. 189, pl. 33, fig. B (types; off Brazil, 500 to
770 fathoms). -- GOODE and BEAN, Oceanic Ichth.,
1895, p. 65, pl. 20, fig. 75 (Blake Station XCVIII
off St. Vincent, 513 fathoms; Albatross Stations
2385 and 2117, 683 to 740 fathoms). -- JORDAN and
EVERMANN, Bull. U. S. Nat. Mus., No. 47, pt. 1896,
p. 545 (compiled). -- REGAN, Ann. Mag. Nat. Hist.,
ser. 8, vol. 7, 1911, p. (). -- PARR, Bull.
Bingham Oceanogr. Collection, vol. 3, art. 3, Dec.
1928, p. 27 (compiled).

Depth $6 \frac{3}{4}$ to $7 \frac{1}{5}$; head $3 \frac{1}{2}$ to $4 \frac{3}{4}$, width 2. Snout 3 to $3 \frac{3}{5}$ in head from snout tip; eye $8 \frac{1}{3}$ to 10, $2 \frac{1}{3}$ to $3 \frac{1}{3}$ in snout, $3 \frac{1}{2}$ to $4 \frac{1}{5}$ in interorbital; maxillary extends $1 \frac{1}{2}$ to 2 eye diameters behind eye, expansion $\frac{3}{4}$ to 1 eye diameters, length $1 \frac{1}{2}$ to $2 \frac{1}{4}$ in head from snout tip; interorbital 2 to $2 \frac{2}{3}$, low, slightly convex. Gill rakers 13 + 31, finely lanceolate, slender, twice gill filaments equal $2 \frac{1}{4}$ eye diameters.

Scales 50 to 60 in lateral line to caudal base and 3 or 4 more on latter; 6 above, 7 or 8 below, 27 or 28 predorsal forward to eye. Scales very caducous, most all fallen.

D. II, 12, I, first branched ray $1 \frac{1}{5}$? to $1 \frac{2}{5}$ in total head length; adipose fin 5, inserted midway between hind dorsal ray base and caudal base; A. I, 8, I, first branched ray $1 \frac{2}{5}$ to $2 \frac{1}{5}$; caudal $1 \frac{1}{8}$? to $1 \frac{1}{5}$, emarginate; least depth of caudal peduncle 3 to $3 \frac{1}{5}$; pectoral rays 2+9, uppermost reaches middle of caudal, gives off aftershaft at first fourth, of other rays lowest equally long as first; ventral rays 9, length $3 \frac{1}{5}$ to $3 \frac{2}{5}$ in combined head and trunk to caudal base.

Body dark brown. Inside gill opening dusky. Iris grayish. Fins whitish.

Atlantic Ocean.

34936 U. S. N. M. Albatross Station 2117. In 683
fathoms. Length 150 mm.

44326 U. S. N. M. Albatross Station 2385. In 740
fathoms. Length 150 mm.

Bathypterois filiferus Gilchrist

Bathypterois filiferus GILCHRIST, Marine Invest. South Africa, vol. 4, 1906, p. 166, pl. 48. Off Cape Point, in 100 to 600 fathoms. -- GILCHRIST and VON BONDE, Fisher. Marine Biol. Surv. South Africa, Rep. No. 3, 1922 (1924) No. 7, p. 7 (off Cape Point and Table Bay, 880 to 1400 fathoms). -- BARNARD, Ann. South African Mus., vol. 21, pt. 1, June 1925, p. 233 (type). -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 27 (compiled).

Belonepterois (Bathypterois) filiferus ROULE, Résult.

Camp. Sci. Monaco, fascic, 52, 1919, p. 37 (comparison).

Depth $6 \frac{1}{8}$; head $3 \frac{3}{4}$ to 4. Snout $2 \frac{1}{2}$ to $2 \frac{2}{3}$ in head from snout tip; eye 12, 4 in snout; maxillary extends $3 \frac{2}{3}$ eye diameters behind eye, expansion equals $1 \frac{1}{2}$ eye diameters, length $1 \frac{1}{2}$ in head from snout tip; interorbital $2 \frac{1}{2}$ to $2 \frac{2}{3}$ moderately high.

Scales 55 to 57 in lateral line; 7 above, 5? below.

D. I, 13, I, first branched ray $1 \frac{1}{5}$ in total head; adipose fin 9; A. 9, first ray $1 \frac{1}{10}$; least depth of caudal peduncle $3 \frac{1}{5}$; P. rays 2 + 11 to 13, uppermost ray $1 \frac{3}{4}$ in combined head and body without caudal, forked opposite adipose fin and aftershaft $1 \frac{3}{4}$ in total head length; ventral $1 \frac{3}{4}$ in body without caudal, nearly reaches caudal base, 2 outermost rays little prolonged and ends dilated; caudal $2 \frac{4}{5}$, 2 lowest rays little prolonged and ends dilated, fin without lower notch.

Brownish. Gill opening purplish. Length 300 mm.

(Gilchrist, Barnard.)

Off South Africa.

Bathypterois insularum Alcock

Bathypterois insularum ALCOCK, Ann. Mag. Nat. Hist., ser. 6, vol. 10, 1892, p. 356. Laccadive Sea (N. Lat. $14^{\circ} 35' 15''$ E. Long. $72^{\circ} 02' 37''$), in 1140 fathoms. -- GOODE and BEAN, Oceanic Ichth., 1895, pp. 64, 511 (reference). -- ALCOCK, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, 1896, p. 332 (reference); Cat. Deep Sea Fishes Indian Mus., 1899, p. 158 (Arabian Sea, off the Laccadive Islands, 1140 fathoms); Illustrat. Zool. Investigator, Fishes, pt. 7, 1900, pl. 32, fig. 1. -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 27 (compiled).

Bathypterois capensis GILCHRIST and VON VONDE, Fisher

Marine Biol. Surv. South Africa, Rep. No. 3, 1922 (1924), No. 7, p. 8, pl. 2, fig. 1. Off Table Bay, 1220 fathoms. -- BARNARD, Ann. South African Mus., vol. 21, pt. 1, June 1925, p. 233 (type).

Depth $7 \frac{3}{4}$; head $3 \frac{7}{8}$. Snout 3 in head from snout tip; eye 13, 4 in snout; maxillary extends $3 \frac{1}{2}$ eye diameters behind eye, expansion equals $1 \frac{1}{2}$ eye diameters, length $1 \frac{1}{2}$ in head from snout tip; interorbital slightly less than snout, moderately high.

Scales 49 in lateral line to caudal base and 3 more on latter; 7 above, 7 below.

D. I, 11, I, first branched ray $1 \frac{2}{3}$ in total head length; adipose fin $5 \frac{2}{3}$; A. I, 7, I, first branched ray $1 \frac{3}{4}$; least depth of caudal peduncle $3 \frac{2}{3}$; caudal $2 \frac{2}{3}$ in rest of body, lower 2 rays little extended, fin emarginate, no lower notch; pectoral rays $2 + 12$ or 13, second of upper group prolonged far as adipose fin, forked just behind depressed dorsal, uppermost ray about $\frac{1}{3}$ of second ray, rays of lower group reaching vent; ventral reaches back opposite adipose fin, 2 outermost rays prolonged.

Black. Fins hyaline gray. Length 140 mm. (Alcock.)

Arabian Sea and off South Africa.

Bathypterois longifilis Günther

Bathypterois longifilis GÜNTHER, Ann. Mag. Nat. Hist., ser. 5, vol. 2, 1878, p. 183. Near Kermadec Island, in 520 to 630 fathoms; Rep. Voy. Challenger, vol. 22, 1887, p. 185, pl. 47, fig. B, pl. 48, fig. B (types). -- GOODE and BEAN, Oceanic Ichth., 1895, p. 64 (reference). -- REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, 1911, p. 128 (diagnosis in key). -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 27 (compiled). -- FOWLER, Mem. Bishop Mus., vol. 10, 1928, p. 66 (compiled; part).

Depth 6 to $6\frac{1}{2}$; head $3\frac{4}{5}$ to $3\frac{7}{8}$, width $2\frac{1}{3}$ to 3. Snout $2\frac{9}{10}$ to $3\frac{1}{8}$ in head from snout tip; eye 19 to 20, 6 to $6\frac{1}{2}$ in snout, 7 to 8 in interorbital; maxillary extends 5 eye diameters behind eye, expansion equals 2 to $2\frac{1}{4}$ eye diameters, length $1\frac{1}{2}$ to $1\frac{3}{4}$ in head from snout tip; interorbital $2\frac{7}{8}$ to $3\frac{1}{4}$, moderately **high**. Gill rakers 12 + 30, slender, needle shaped, $\frac{1}{4}$ of head.

Scales 50 to 59 in lateral line to caudal base and 3 more on latter; 6 above, 8 below.

D. II, 11, I, first branched ray $1\frac{1}{3}$ to $1\frac{2}{5}$ in total head length; adipose fin (sometimes absent) $4\frac{7}{8}$; A. I, 8, I, first branched ray $1\frac{2}{5}$ to $2\frac{1}{3}$; caudal $1\frac{2}{5}$ or sometimes lower ray prolonged, lower notch absent; least depth of caudal peduncle $3\frac{1}{2}$ to $3\frac{2}{3}$ in total head; pectoral 3 + 13, uppermost prolonged, forked midway between adipose fin and caudal base, aftershaft slightly shorter, lower group of rays reach adipose fin; ventral reaches middle of depressed anal, first 2 rays sometimes little prolonged and **dilated** terminally.

Light greenish with narrow black margins to scales. Sides of head, abdomen, inside mouth and abdominal cavity black. Vertical and ventral fins black, with lighter edges. Pectorals colorless. Length 330 mm. (Günther.)

Western Pacific.

Bathypterois guentheri Alcock

Bathypterois guentheri ALCOCK, Ann. Mag. Nat. Hist.,

ser. 6, vol. 4, 1889, p. 450. Andaman Sea 7 1/2

miles east north Cinque Island, in 490 fathoms;

ser. 6, vol. 8, Aug. 1891, p. 129 (Bay of Bengal,

561 fathoms); Illustrat. Zool. Investigator, Fishes,

Pt. 1, 1892, pl. 7, fig. 6; Journ. Asiatic Soc.

Bengal, vol. 65, pt. 2, 1896, p. 332 (off coasts of

Andaman Islands, 490 to 561 fathoms). -- PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec.

1928, p. 25 (compiled).

Bathypterois guentheri GOODE and BEAN, Oceanic Ichth.,

1895, p. 64 (reference). -- ALCOCK, Cat. Deep Sea

Fishes Indian Mus., 1899, p. 157 (Andaman Sea, 490

fathoms; Bay of Bengal, off Andaman Islands, 561

fathoms; Arabian Sea, off the Laccadives and Maldives,

636 and 719 fathoms).

Bathypterois guntherii GOODE and BEAN, Oceanic Ichth.,

1895, p. 511 (reference).

Belonopterois guentheri ROULE, Result. Camp. Sci. Mon-

aco, fascic. 52, 1919, p. 37 (comparison).

Depth $5 \frac{2}{5}$; head $3 \frac{1}{2}$. Snout $3 \frac{2}{3}$ in head from snout tip; eye 24, $6 \frac{3}{4}$ in snout; maxillary extends $7 \frac{1}{4}$ eye diameters behind eye, expansion equals $1 \frac{1}{2}$ eye diameters, length $1 \frac{3}{5}$ in head from snout tip; interorbital moderately high, nearly flat from side to side. Gill rakers numerous, close set, long, bristle like.

Scales 55 in median lateral series, 14 transversely.

D. I, 11, first branched ray $1 \frac{1}{3}$ in total head length; adipose fin $5 \frac{7}{8}$; A. 10, I, first ray 2; least depth of caudal peduncle $3 \frac{2}{5}$; caudal $1 \frac{1}{2}$ in rest of body, widely forked and lower ray greatly extended with bifurcate end without lower notch; P. $1 \frac{1}{3}$, rays 2, 6 + 5, upper 2 rays prolonged to caudal base, lower 5 rays subequal and reach adipose fin; ventral greatly prolonged, reaches beyond caudal base, length $1 \frac{1}{6}$ in body without caudal.

Dark brown, with 2 broad transverse white bands, 1 just before dorsal, other near middle of tail. Large opaque white 3 lobed body shows through bones of crown of head and snout. White streak along mucous canal of mandible. Caudal white, other fins black except their prolonged white rays with black tips. Length 255 mm. without prolonged caudal ray. (Alcock.)

Arabian and Andaman Seas and Bengal Bay.

Bathypterois viridensis (Roule)

Belonepterois viridensis ROULE, Bull. Inst. Oceanogr.

Monaco, No. 320, 1916, p. 13. Ile de Sal, Cape

Verde, 1477 meters; Res. Camp. Sci. Monaco, vol. 52,

1919, p. 35, pl. 1, fig. 3 (type locality N. $16^{\circ} 34'$

W. $23^{\circ} 3' 15''$).

Bathypterois viridensis PARR, Bull. Bingham Oceanogr.

Collection, vol. 3, art. 3, Dec. 1928, p. 25 (refer-

ence).

Bathypterois (Hemipterois) viridensis PARR, Bull. Bing-

ham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,

p. 27, fig. 2 (N. $23^{\circ} 54'$ W. $77^{\circ} 9'$, 710 to 720 fathoms).

Depth $5 \frac{2}{5}$; head $3 \frac{3}{5}$. Snout $2 \frac{7}{8}$ in head from snout tip; eye $15 \frac{1}{4}$, $5 \frac{1}{4}$ in snout; maxillary extends 5 eye diameters behind eye, expansion equals 2 eye diameters, length $1 \frac{1}{3}$ in head from snout tip; interorbital moderately high.

Scales 41 in lateral line to caudal base and 3 more on latter; 6 above, 7 below.

D. I, 11, first branched ray $1 \frac{1}{4}$ in total head; adipose fin $4 \frac{1}{6}$; A. I, 8, first branched ray $1 \frac{3}{4}$; least depth of caudal peduncle 3; caudal $1 \frac{4}{5}$ in rest of body, deeply emarginate, lower 2 rays prolonged, dilated at tips and lower with bifurcate tip; pectoral rays 5 + 5, upper most 3 bifurcate, first reaching midway in postdorsal space to adipose fin; ventral nearly twice long as pectoral or $1 \frac{1}{4}$ in body without caudal, lowest 2 extended beyond caudal base and tips dilated.

Uniform grayish blue, tinted with russet on head, muzzle and cheeks. Fins clear russet. Length 330 mm. (Roule.)

Atlantic Ocean.

Genus Bathymicrops Murray and Hjort

Bathymicrops MURRAY and HJORT, *Depths of the Ocean*, 1912,
pp. 416, 686. Type Bathymicrops regis MURRAY and
HJORT, monotypic.

Body elongate, very slender, tapering back from head with rather long narrow caudal peduncle. Head depressed. Maxillary very long, but little shorter than head. Mandible slightly protruded. Whole head covered with scales, which only faintly visible through scales as minute black dots. Scales rather small. Dorsal premedian, entirely before postmedian anal. No adipose fin. Caudal triangular. Pectoral inserted rather high. Ventral damaged, midway between pectoral and dorsal.

Bathymicrops regis Murray and Hjort

Bathymicrops regis MURRAY and HJORT, Deaths of the

Ocean, 1912, pp. 396, 416, fig. 305, p. 686, fig. 501

d (head). N. $28^{\circ} 54'$ W. $24^{\circ} 14'$, west of Canaries.

-- PARR, Bull. Bingham Oceanogr. Collection, vol. 3,
art. 3, Dec. 1928, p. 23 (reference).

Depth $13 \frac{1}{2}$; head $5 \frac{1}{2}$. Head attenuated in profile;
maxillary $1 \frac{1}{5}$ in head from snout tip, slender; top of head
apparently convex.

Scales 75? from above gill opening in median lateral
series, 7 transversely at dorsal origin.

D. II, 9, fin height $1 \frac{2}{5}$ in total head; A. 14, first
ray 2, caudal $1 \frac{2}{5}$, slightly concave at hind edge; least
depth of caudal peduncle $6 \frac{1}{4}$; pectoral $2 \frac{7}{8}$; ventral $1 \frac{4}{5}$.

Uniform, with 7 slightly darker transverse obscure nar-
row bars or blotches. Fins paler than body. Length 111 mm.

(MURRAY and HJORT.)

North Atlantic.

Genus Ipnops Günther

Ipnops GÜNTHER, Ann. Mag. Nat. Hist., ser. 5, vol. 2,

1878, p. 186. Type Ipnops murrayi GÜNTHER, monotypic.

Body elongate, subcylindrical. Head depressed. Snout wide, long, spatulate. No eye. Jaws with narrow bands of villiform teeth. Palate toothless. Whole upper surface with pair of large, transparent, thin, membrane bones, each covering luminous organs. Nostrils rudimentary. Gill rakers, long, rather numerous. No pseudobranchiae. Branchiostegals 10. No air bladder. No pyloric appendages. Bones of head well ossified. Scales large, thin, deciduous. Dorsal premedian. No adipose fin. Anal postmedian, moderate. Caudal triangular. Pectoral inserted medianly on side. Ventral inserted midway between pectoral and dorsal.

Analysis of species

- ¹
a . Scales 55 in lateral line; A. 13.
murrayi.
- ²
a . Scales 59 or 90 in lateral line;
A. 17 or 18. agassizii.

Ipnops murrayi Günther

Ipnops murrayi GÜNTHER, Ann. Mag. Nat. Hist., ser. 5, vol. 2, 1878, p. 187. South Atlantic, in 1600 to 1900 fathoms; Rep. Voy. Challenger, vol. 22, 1887, p. 191, pl. 49, fig. B (type; near Tristan da Cunha; north of Celebes; 1900 to 2150 fathoms). -- MOSELEY, Rep. Voy. Challenger, vol. 22, Append. A., 1887, p. 269, pls. 67 and 68 (Phosphorescent organ of head). -- GOODE and BEAN, Oceanic Ichth., 1895, p. 67, figs. 67-68 (off Cuba and Bequia, 955 to 1507 fathoms). -- JORDAN and EVERMANN, Bull. U. S. Nat. Mus. No. 47, pt. 1, 1896, p. 547 (compiled). -- BRAUER, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 380 (reference). -- GILCHRIST, Marine Invest. South Africa, vol. 4, 1908, p. 166 (off Cape Point, 800 to 900 fathoms).

-- WEBER and BEAUFORT, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 179 (compiled). --

BARNARD, Ann. South African Mus., vol. 21, pt. 1,

June 1925, p. 231 (compiled). -- PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,

p. 23 (compiled).

Depth 9; head $5 \frac{1}{8}$, width 2. Maxillary $1 \frac{2}{3}$ in head from snout tip; interorbital 2, broadly convex. Gill rakers $2 + 22$, finely lanceolate, greater than gill filaments or 5 in head from snout tip.

Scales 50 in lateral line to caudal base; 6 transversely from dorsal origin; 20 predorsal. Scales very caducous, most all fallen.

D. II, 8, first branched ray $1 \frac{1}{6}$ in total head length; A. III, 11, first branched ray $2 \frac{1}{5}$; caudal 2?, broken, slightly emarginate behind; least depth of caudal peduncle $5 \frac{1}{2}$; pectoral $1 \frac{1}{3}$; ventral $1 \frac{2}{5}$.

Dark brown. Luminous organ on top of head grayish. Opercles blackish. Fins whitish.

Atlantic Ocean.

U. S. N. M. N. $24^{\circ} 36'$ W. $84^{\circ} 5'$. In 955 fathoms. Blake Station CCXXXIII. Length 139 mm.

Ipnops agassizii Garman

Ipnops agassizii GARMAN, Mem. Mus. Comp. Zool., vol.

24, 1899, p. 259, pl. , figs. 2-2a. N. $2^{\circ} 34'$

W. $92^{\circ} 6'$, 1360 fathoms, off Galapagos Islands. --

PARR, Bull. Bingham Oceanogr. Collection, vol. 3,

art. 3, Dec. 1928, p. 24 (reference).

Depth $13 \frac{1}{2}$; head $5 \frac{2}{5}$, width $1 \frac{7}{8}$. Maxillary $1 \frac{2}{3}$ in head from snout tip; interorbital $1 \frac{7}{8}$, broadly convex. Gill rakers $3 + 20$, finely lanceolate, greater than gill filaments or $4 \frac{1}{8}$ in head from snout tip.

Scales 53 in lateral line to caudal base, 6 transversely at dorsal origin, 20 predorsal. Scales very caducous most all having fallen.

D. I, 6, third branched ray $1 \frac{1}{5}$ in total head length; A. III, 15, I, rays all broken; caudal lost; least depth of caudal peduncle 5; pectoral $2 \frac{1}{5}$?; ventral 2?

Dusky brown to blackish. Luminous organs on top of head grayish. Opercles blackish. Fins pale brownish.

54616 U. S. N. M. Off Galapagos Island. Albatross
Collection 3413. April 5, 1891. Length, without caudal,
132 mm.

Genus Paralepis Oken

Paralepis OKEN, Isis, 1817, p. 1782, (On CUVIER, Regne Animal., vol. 2, 1817, p. 289.) Type Coregone paralepis (RISSO) CUVIER = Paralepis coregonoides RISSO, virtually trutotypic.

Synproptopterus (COCCO) BONAPARTE, Cat. Metod. Pisc. Europ., 1846, p. 35. Atypic.

Symproptopterus (COCCO) FACCIOLA, Natural. Siciliana, vol. 5, 1885, pp. 14, 147. Atypic.

Prymnothonus RICHARDSON, Ichth. Voy. Erebus and Terror, 1844, 48, p. 51. Type Prymnothonus hookeri RICHARDSON, monotypic.

Arctozenus GILL, Proc. Acad. Nat. Sci, Philadelphia, 1865, p. 188. Type Paralepis borealis REINHARDT, orthotypic.

Notolepis DOLLO, Proc. Roy. Soc. Edinburgh, vol. 27, 1906-

1907, p. . Type Sudis coarctsi DOLLO, monotypic.

Lestidium GILBERT, Bull. U. S. Fish Comm., vol. 23, pt.

2, 1903 (1905), p. 607. Type Lestidium nudum GILBERT,
monotypic.

Lestidiops HUBBS, Univers. California Publ. Zool., vol.

16, No. 13, 1916, p. 154. Type Lestidiops sphyraenop-
sis HUBBS, orthotypic.

Bathysudis PARR, Bull. Bingham Oceanogr. Collection, vol.

3, art. 3, Dec. 1928, p. 41. Type Paralepis specio-
sus BELLOTTI, monotypic.

Body elongate, compressed. Head compressed, attenuated. Eye large. Mouth widely cleft, lower jaw protruding. Maxillary closely joined to premaxillary, not protractile, long, slender. Teeth round, slender, unequal, with smooth edges, some on palatines and in mandible rather enlarged; uniserial on premaxillaries, mandible, palatines and pterygoids. Palatine teeth at least partly rounded, slender, like those of mandible. Opercle with thin bones. Gill membranes separate, free from isthmus. Gill rakers short, spine like. Pseudobranchiae well developed. Branchiostegals 7. No air vessel. No pyloric coeca. Scales deciduous, largest in lateral line. Dorsal rays 9 to 12, postmedian, short. Adipose fin small, far back. Anal elongate, far posterior or at end of tail. Caudal emarginate. Pectoral weak and feeble in young, better developed with age, low. Ventral small, inserted below or immediately before or behind dorsal.

Analysis of species

- a¹. Large teeth in lower jaw comparatively short or missing with age; preanal length more than 2/3 of fish without caudal.
- b¹. Small teeth in premaxillary with age close fitting with same slight interval between each; openings of scales in lateral line situated near upper and lower scale edges (except speciosus).
- c¹. Anal 30 to 34; pectoral 11 to 13; vertebrae 78 to 85; space between adipose fin and hypural .3 to .5 total length without caudal.
- risso.
- c². Anal 23 to 25; pectoral 14 to 16; vertebrae 67 to 74; space between adipose fin and hypural .9 to .11 total length without caudal.
- d¹. Each premaxillary with but single large tooth in front; longest of large teeth in mandible (missing with age) to less than .3 of snout.
- e¹. Maxillary reaches 1/4 of eye.
- coregonoides.
- e². Maxillary reaches eye.
- ringens.

d². Each premaxillary with several fairly large teeth in front, like large lower teeth, length .5 of snout.

f¹. Snout 2 1/2 in head; peritoneal pigmented section 7 or 8.

speciosus.

f². Snout 2 3/5 to 3 in head; peritoneal pigmented section 10.

brevirostris.

b². Small teeth in premaxillaries with age in pairs with fairly large intervals alternating with quite small ones; openings of scales in lateral line near horizontal median line of scales, at comparatively slight distance from one another.

brevis.

a². Large lower teeth long, .7 to .11 of snout length; preanal length little less than 3/5 of total without caudal.

g¹. Anal rays 27 to 34.

h¹. Ventral inserted before dorsal at space equals .6 to .9 of total without caudal.

i¹. Dorsal base .4 of total without
caudal, rays 11; vent almost
below dorsal origin.

j¹. Head less than 5 without cau-
dal; vertebrae 88 to 92;
pectoral 11. sphyraenoides.

j². Head more than 5 with caudal;
vertebrae 78 to 84; pect-
oral 12 or 13.

pseudosphyraenoides.

i². Dorsal base 2.5 of total length
without caudal, rays 9 to 11;
vent before dorsal space
equal to .4 of total without
caudal.

k¹. Snout 2 to 2 1/2 in head.

l¹. Anal 28; snout 2 1/2.

affinis.

l². Anal 25 or 26; snout 2.

elongatus.

l³. Anal 28 to 30; snout 2.

pacificus.

k². Snout less than 2 in head.

m¹. Anal 31. nudus.

m². Anal 36 to 38.

philippinus.

h^2 . Ventral inserted below fore most
part of dorsal. thermophilus.

g^2 . Anal rays 42 to 44.

n^1 . Head $6 \frac{1}{6}$; eye 5. .
intermeduis.

n^2 . Head 5 to $5 \frac{1}{8}$; eye
 $6 \frac{1}{3}$. japonicus.

Paralepis risso Bonaparte

Paralepis risso BONAPARTE, Iconogr. Fauna Italica,

vol. 3, Pesci, pt. 1, fasc. 29, 1840, no pagination,

pl., fig. 1. Italy. -- BELLOTTI, Atti Soc. Ital.

Sci. Nat. Milano, vol. 33, 1891, p. 138 (compiled);

vol. 24, 1892, p. 34 (reference).

Paralepis rissoi LUTKEN, Vidensk. Medd. Nat. Foren.

Kobenhavn, ser. 5, vol. 3, 1891 (1892), p. 226 (

). -- CARUS, Prodr. Faun. Medit., vol. 2,

1893, p. 567 (compiled). -- SANZO, R. Com. Talass.

Ital. Venice, Mem. 62, 1917, p. (). -- EGE,

Vidensk. Medd. Nat. Foren. Kobenhavn, vol. 69, 1918,

p. 234 (); Rep. Danish Oceanogr. Exped. Medit.,

vol. 2, A. 13, 1930, p. 10, figs. 1-2, p. 101, fig.

26 (North Atlantic, Mediterranean).

Sudis rissoi PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. (35) 38 (note).

Sudis sudis rissoi PARR, Bull. Bingham Oceanogr. Coll-

ection, vol. 3, art. 3, Dec. 1928, p. 40 (reference).

Paralepis coregonoides (not RISSO) CUVIER, Hist. Nat.

Poiss., vol. 3, 1829, p. 357 (?not pl. 67) (part).

-- BONAPARTE, Fauna Italica, vol. 3, Pesci, pt. 1,

fasc. 29, 1840, no pagination, pl., fig. 1 (not

diagnosis). -- BELLOTTI, Atti Soc. Ital. Sci. Nat.

Milano, vol. 20, 1877, p. 57 (). -- VINCI-

GUERRA, Ann. Mus. Civ. Stor. Nat. Genoa, ser. 2, vol.

2, 1885, p. 466 (). -- ROULE and ANGEL, Res.

Camp. Sci. Monaco, vol. 79, 1930, p. 62 (65), pl. 3,

figs. 86 and 87 (fig. 86 named Paralepis sphyraenoides).

Paralepis corregonoides SWAINSON, Nat. Hist. Animals,
vol. 2, 1839, p. 242 (on "Cuv. and Val. 66 (pl. 67
evidently intended)").

Paralepis borealis (not REINHARDT) KROYER, Naturh.

Tidsskrift., vol. 2, 1846-49 (1847), p. 241.

-- GAIMARD, Voy, Skandin. Lapon. Spitz. Feroe, 1842-
56 (1847), p. , pl. 16 B, fig. 1 (). --

GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 419
(part). -- GOODE and BEAN, Oceanic Ichth., 1895, p.
119, pl. 38, fig..143 (Western Atlantic; Gulf of St.
Lawrence).

Sudis borealis JORDAN and GILBERT, Bull. U. S. Nat. Mus.,
No. 17, 1882, p. 278 (compiled).

Arctozenus borealis JORDAN and EVERMANN, Bull. U. S. Nat.
Mus., No. 47, pt. 1, 1896, p. 601 (compiled).

Paralepis coruscans JORDAN and GILBERT, Proc. U. S.

Nat. Mus., vol. 3, 1880 (1881), p. 411. Port

Townsend, Washington.

Sudis coruscans JORDAN and GILBERT, Bull. U. S. Nat.

Mus., No. 16, 1882, p. 278 (copied).

Arctozenus coruscans JORDAN and EVERMANN, Bull. U. S.

Nat. Mus., No. 47, pt. 1, 1896, p. 601 (compiled).

Paralepis pseudocoregonoides SARATO, Moniteur des

Etrangers, Nice, March 15, 1887, p. . Nice. --

MOREAU, Hist. Nat. Poiss. France, Suppl., 1891, p.

121 (). -- ?COLLETT, Res. Camp. Sci.

Monaco, vol. 10, 1896, p. 117 (N. $47^{\circ} 26' 9''$ E. 9°

$17' 15''$).

Paralepis kroyeri LÜTKEN, Vidensk. Medd. Nat. Foren,

Kobenhavn, ser. 5, vol. 3, 1891 (1892), p. 222

(). -- JENSEN, Medd. Grönland, vol. 29,

1904, p. 272 (). -- SAEMUNDISSON, Skrift.

Komm. Havunders, No. 5, Kobenhavn, 1908, p. 100

(). -- GRIEG, Bergens Mus. Aarbok, Nr. 6,

1911, p. 28 (). -- EGE, Vidensk. Medd. Dansk

Naturh. Foren. Kobenhavn, vol. 69, 1918, p. 243

(). -- NORDGARD, K. Norske Vidensk. Selsk.

Skrift. No. 4, Trondhjem, 1924, p. 4 (). --

KNIPOVICH, Trans. Institute Sci. Explor. of the

North, No. 27, Moscow, 1926, p. 76, fig. 35 ().

-- SAEMUNDSSON, Synopsis Fishes of Iceland, Reykjavik,

1927, p. 44.

Sudis kroyeri COLLETT, Arch. Math. Naturvidensk.

Christiania, vol. 19, Nr. 8, 1897, p. 21 ();

Vidensk. Selsk. Forhandl. Christiania, 1903 (1904),

pt. 2, p. 117 (). -- NORMAN, Discovery Rep.,

vol. 2, 1930, p. 318 (S. $33^{\circ} 25'$ E. $6^{\circ} 31'$, 1000

meters: S. $33^{\circ} 20'$ to S. $33^{\circ} 46'$ E. $15^{\circ} 18'$ to 15°

$8'$, 625 to 675 meters; S. $2^{\circ} 43' 30''$ W. $00^{\circ} 56' 30''$,

125 to 175 meters).

Sudis rissoi subsp. kroyeri PARR, Bull. Bingham Oceanogr.

Collection, vol. 3, art. 3, Dec. 1928, p. 39 (compiled).

Paralepis rissoi kroyeri EGE, Rep. Danish Oceanogr. Exp.

Medit., vol. 2, A. 13, 1930, p. 17, figs. 3-4, p.

106 (North Atlantic).

Paralepis speciosus (not BELLOTTI) PIETSCHMANN, Sitz.

Ber. Akad. Wiss. Wien, Math.naturw. Klasse, vol. 23,

pt. , 1914, p. 440, pl. 6, figs. 3.

Depth 13 or 14; head 4 to $4 \frac{1}{4}$, width 6 to $6 \frac{1}{2}$.
Snout 2 to $2 \frac{1}{10}$ in head from snout tip; eye $6 \frac{1}{4}$ to $6 \frac{1}{2}$,
3 to $3 \frac{1}{8}$ in snout, greater than interorbital; maxillary
reaches $1 \frac{1}{4}$ to $1 \frac{2}{5}$ in snout, $2 \frac{1}{2}$ to $2 \frac{2}{3}$ in head from
snout tip; interorbital 8 to $9 \frac{1}{5}$, level, depressed medially;
opercle with 8 or 9 radiating striae. Gill rakers as numer-
ous close set minute or villiform points; gill filaments
greatly longer or $1 \frac{7}{8}$ in eye.

Scales 60 in lateral line, ending over middle of anal.

D. II, 6, first branched ray 5? in total head length;
adipose fin $6 \frac{3}{4}$; A. IV, 30, first branched ray $3 \frac{3}{5}$; caudal
 $4 \frac{2}{3}$, well forked; least depth of caudal peduncle $1 \frac{2}{3}$ in
eye; pectoral 4 in total head length; ventral 5?

Uniform brownish. Iris neutral gray. Silvery white
reflections on opercle. Fins pale or whitish, with dusky tints
basally.

Atlantic and Pacific Oceans. Most of my materials badly
preserved, so the above description necessarily imperfect.

27171 U. S. N. M. Straits of Fuca, Washington. Length
232? mm. Type of Paralepis coruscans.

53051 U. S. N. M. N. 32° W. 76°

Albatross Station 2677. Length 180? to 210? mm. 2
examples.

3 examples U. S. N. M. Albatross Station 2676. Length
255 to 295 mm.

Paralepis coregonoides Risso

- Paralepis coregonoides RISSO, Journ. Phys. Chim. Hist. Nat. Paris, vol. 91, July 1920 (Oct.), p. 253. Sea of Nice: Hist. Nat. Eur. Merid., vol. 3, 1826, p. 472, pl. 7, fig. 15 (Nice). -- VALENCIENNES, Hist. Nat. Poiss., vol. 7, 1831, p. 510 (Nice; not vol. 3, p. 357). -- BONAPARTE, Fauna Italica, vol. 3, Pesci, pt. 1, fasc. 29, 1840, no pagination (not plate or figure); Cat. Metod. Pesc. Europ., 1846, p. 35 (reference). -- GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 418 (compiled). -- CANESTRINI, Fauna Italica, Pesci, 1874, p. 127 (Nice). -- DAY, Fishes Great Britain, vol. 2, 1880-84, p. (51) 367 (Polkeris, Cornwall). -- MOREAU, Hist. Nat. Poiss. France, vol. 3, 1881, p. 519, fig. 205. -- BELLOTTI, Atti Soc. Sci. Nat. Milan, vol. , 1891, p. 140 (). --

MOREAU, Hist. Nat. Poiss. France, Suppl., 1891, p.
120 (). -- BELLOTTI, Atti Soc. Sci. Nat.
Milan, vol. , 1892, p. (). -- LUTKEN,
Vidensk. Medd. Nat. Foren. Kobenhavn, 1891 (1892),
p. 226. -- COLLETT, Res. Sci. Camp. Monaco, vol. 10,
1895, p. 119 (note). -- GOODE and BEAN, Oceanic Ichth.,
1895, p. 119 (part; not material). -- JORDAN and EVER-
MANN, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p.
602 (part; compiled). -- FAGE, Ann. Inst. Oceanogr.
Monaco, vol. 1, No. 7, 1910, p. 16. -- FOWLER, Proc.
Acad. Nat. Sci. Philadelphia, 1910, p. 406 (Italy).
-- EGE, Vidensk. Medd. Dansk Nat. Foren. Kobenhavn,
vol. 69, 1918, p. 245 (); Rep. Danish Oceanogr.
Exped. Medit., vol. 2, A. 13, 1930, p. 29.

Paralepis coregonoides coregonoides Ege, Rep. Danish

Oceanogr. Exped. Medit., vol. 2, A. 13, 1930, p. 29,
figs. 5 to 7, p. 109.

Sudis coregonoides Parr, Bull. Bingham Oceanogr. Coll-
ection, vol. 3, art. 3, Dec. 1928, p. 40 (note).

Coregonus maraenula (not LACEPÈDE) RISSO, Ichth. Nice,
1810, p. 328.

Paralepis borealis REINHARDT, Vidensk. Selsk. nat. math.
Afh. Kobenhavn, vol. 7, 1838, p. 115.

-- GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 419 (part). -- LUTKEN, Vidensk. Medd. Naturh. Foren. Kobenhavn, 1891 (1892), p. 227. -- SAEMUNDSSON, Skrift. Komm. Havunders. Kobenhavn, No. 5, 1908, p. 99 (part). -- EGE, Vidensk. Medd. Dansk Naturh. Foren. Kobenhavn, vol. 69, 1918, p. 245. -- SAEMUNDSSON, Fish Islansk, Reykjavik, 1926, p. 394 (part); Synopsis Fishes Iceland, 1927, p. 44 (part); Vidensk. Medd. Dansk Naturh. Foren. Kobenhavn, vol. 84, 1927, p. 177 (part).

Paralepis coregonoides borealis EGE, Rep. Danish

Oceanogr. Exped. Medit., vol. 2, A. 13, 1930, p.
37, figs. 8-10, p. 114, fig. 27.

Paralepis cuvieri BONAPARTE, Fauna Italica, vol. 3,

Pesci pt. 1, fasc. 29, 1840, no pagination (name
on CUVIER) -- BELLOTTI, Att. Soc. Ital. Sci. Nat.
Milan, vol. 20, 1877, pp. 55, 57 (). --

GIGLIOLI, Elenco Fauna Ital. Pesci, 1880, p. .

-- VINCIGUERRA, Ann. Mus. Civ. Stor. Nat. Genova,
ser. 2, vol. 2, 1885, p. 466 (). -- CARUS,

Prodr. Fauna Medit., vol. 2, 1892, p. 567 (compiled).

Paralepis barracudina FOWLER and PHILLIPS, Proc. Acad.

Nat. Sci. Philadelphia, 1910, p. 403, fig. Corson's

Inlet, New Jersey. -- FOWLER, Proc. Acad. Nat. Sci.

Philadelphia, 1911 (1912), p. 571 (type); Proc. Biol.

Soc. Washington, vol. 33, Dec. 30, 1920, p. 149

(type); Copeia, No. 170, April 30, 1929, p. 22 (note).

Paralepis pseudocoregonoides (not SERATO) FOWLER,

Proc. Acad. Nat. Sci. Philadelphia, 1911 (1912),

p. 571 (Bonaparte Italian materials).

Depth 10; head $3 \frac{7}{8}$, width $4 \frac{7}{8}$. Snout $2 \frac{2}{5}$ in head from snout tip; eye $5 \frac{3}{5}$, $2 \frac{1}{3}$ in snout, greatly exceeds interorbital; maxillary reaches $1 \frac{1}{4}$ to eye, length 3 in head from snout tip; interorbital $7 \frac{1}{8}$, level, depressed medially. Gill rakers $7 + 22$, very slender, fine, lanceolate, $\frac{1}{2}$ of gill filaments, which $\frac{1}{2}$ of eye.

Scales 57 in lateral line extend until opposite middle of anal. Scales very caducous, most all fallen.

D. II, 8, I, first branched ray $3 \frac{1}{4}$ in total head length; adipose fin 5; A. III, 22, first branched ray $3 \frac{7}{8}$; caudal damaged; least depth of caudal peduncle $1 \frac{1}{4}$ in eye; pectoral $2 \frac{3}{4}$ in head; ventral 4, inserted little behind dorsal origin.

Largely dull brown, shaded with deeper hues. Iris silvery gray. Side of head and opercle silvery white. Dusky brown on top of head and snout. Fins brownish white.

Atlantic Ocean.

4934 U. S. N. M. Nice. M. Bellotti. Length 188 mm.

33480 U. S. N. M. Albatross Station 2067. Length 41 mm. A very poorly preserved specimen. As Sudis borealis.

37627 A. N. S. P. Corson's Inlet, New Jersey. March 27, 1910. Dr. R. J. Phillips. Type of Paralepis barracudina.

Paralepis ringens (Jordan and Gilbert)

Sudis ringens JORDAN and GILBERT, Proc. U. S. Nat.

Mus., vol. 3, 1880, p. 373. Santa Barbara Channel,

California; Bull. U. S. Nat. Mus., No. 16, 1883, p.

277 (copied). -- GOODE and BEAN, Oceanic Ichth.,

1895, pp. 118, 121 (reference). -- JORDAN and EVER-

MANN, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p.

600 (copied). -- PARR, Bull. Bingham Oceanogr. Coll-

ection, vol. 3, art. 3, Dec. 1928, p. 40 (discussion).

?Sudis jayakari BOULENGER, Proc. Zool. Soc. London, 1889,

p. 241, fig. (head). Muscat, Arabia.

Depth 16; head 4, width $4 \frac{3}{4}$? Snout 2? in head; eye $4 \frac{1}{2}$?, 2? in snout, apparently exceeds interorbital; maxillary reaches eye, about 2? in head; premaxillary teeth small, subequal, close set, hooked back with long slender front canine each side; lower teeth 10, sharp, slender, unequal each side, some short, 3 or 4 very long and canine like and near front also canine each side; long row of palatine teeth, 1 or 2 front ones each side besides 1 or 2 others long, slender, canine like. No gill rakers; gill filaments little less than eye.

Scales very large, all now fallen. About 55? scales (pockets) in lateral line, which ends opposite middle of anal.

D. 11, fin height 3? in head; A. 25, fin height 3?; caudal $3 \frac{1}{4}$?, apparently forked; pectoral damaged; ventral damaged; caudal peduncle very slender, least depth $\frac{2}{3}$? of eye.

Light brown, apparently uniform.

Pacific and Indian? Oceans.

The above account of the badly macerated remains of the type, evidently poorly preserved when originally secured.

27401 U. S. N. M. Santa Barbara Channel. From stomach of hake (Merluccius) which found in an albicore (Germo alalunga). Length 140? mm. Type of Sudis ringens, badly broken.

Paralepis speciosus Bellotti

Paralepis speciosus BELLOTTI, Atti Soc. Ital. Sci. Nat.

Milano, vol. 20, 1877, p. 54, fig. . -- VINGI-

GUERRA, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol.

2, 1885, p. 468 (). -- MOREAU, Hist. Nat.

Poiss. France, Suppl., 1891, p. 18 (). --

BELLOTTI, Atti Soc. Ital. Sci. Nat. Milano, vol. 33,

1891, p. 139 pl., fig. 4 (Nice; Messina); vol. 34,

1892, p. 34 (reference). -- GOODE and BEAN, Oceanic

Ichth., 1895, p. 118 (reference). -- PIETSCHMANN,

Sitz. Ber. Akad. Wiss. Wien, Math.-naturw. Klasse, vol.

, pt. , 1914, p. 440, pl. 6, fig. 4 (not pl.

6, fig. 3 or pl. 5, fig. 1) (part; southern Adriatic).

-- REGAN, Brit. Antarctic Terra Nova Exped., Zool.,

vol. 1, No. 4, 1916, p. 138 (Messina). -- EGE, Rep.

Danish Oceanogr. Exped., vol. 2, A. 13, 1930, p.

47, figs. 11-12, p. 118, fig. 28 (Mediterranean).

Lestidium (Bathysudis) speciosus PARR, Bull. Bingham
Oceanogr. Collection., vol. 3, art. 3, Dec. 1928,
p. 42 (part).

Paralepis coregonoides (not RISSO) MOREAU, Hist. Nat.
Paris. France, vol. 3, 1881, p. 518.

Omosudis elongatus (not BRAUER) ZUGMAYER, Res. Camp.
Sci. Monaco, vol. 35, 1911, p. 18, pl. 1, fig. 6
(part).

Depth $7 \frac{1}{10}$; head $3 \frac{1}{3}$. Snout $2 \frac{1}{2}$ in head; eye 4, $1 \frac{1}{2}$ in snout; mouth cleft reaches slightly beyond front of orbit, length $2 \frac{1}{6}$ in head; interorbital rather low.

D. 11, fin base $5 \frac{3}{4}$ in head, origin opposite ventral origin; adipose fin $3 \frac{7}{8}$, over bases of last anal rays; A. 26, fin base $1 \frac{9}{10}$; caudal evidently forked; least depth of caudal peduncle 7; pectoral $3 \frac{3}{4}$; ventral $6 \frac{1}{5}$.

Few dark dots on occiput and along edge of back, also some on myomeres of tail. Peritoneal dark pigment sections 7 or 8. Length 29.6 mm. (Ege.)

Mediterranean.

Paralepis brevirostris (Parr)

Lestidium (Bathysudis) speciosum brevirostris PARR,

Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

Dec. 1928, p. 43. N. $21^{\circ} 31'$ W. $71^{\circ} 11'$, 8000 feet.

Paralepis brevirostris EGE, Rep. Danish Oceanogr. Exped.

Medit., vol. 2, A. 13, 1930, p. 54 (note).

Omosudis elongatus (not BRAUER) ZUGMAYER, Res. Camp.

Sci. Monaco, vol. 32, 1911, p. 18 (part).

Paralepis speciosus (not BELLOTTI) PIETSCHMANN, Sitz.

Ber. Akad. Wiss. Wien, Math. naturw. Klasse, vol. ,

pt. , 1914, p. 440 (part). -- REGAN, Brit. Antarctic

Terra Nova Exped., Zool., vol. 1, No. 4, 1916, p. 138

(N. $29^{\circ} 10'$ W. $33^{\circ} 36'$),

Lestidium (Bathysudis) speciosum PARR, Bull. Bingham

Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p.

42, fig. 4 (p. 37) (part).

Depth $5 \frac{3}{5}$; head 4. Snout $3 \frac{1}{8}$ in head from snout tip; eye $3 \frac{1}{2}$, $1 \frac{1}{8}$ in snout; maxillary reaches little beyond front eye edge though not quite to front pupil edge, length $2 \frac{3}{4}$ in head from snout tip; teeth in jaws slender, wide set, some slightly enlarged fangs in front on premaxillaries and dentaries; series of small teeth on each palatine; interorbital low, apparently level.

D. II, 9, first branched ray $2 \frac{9}{10}$ in total head; adipose fin $3 \frac{1}{4}$; A. IV, 17, first branched ray $2 \frac{1}{3}$, origin little nearer base of last anal ray than ventral origin; caudal $1 \frac{4}{5}$, forked; least depth of caudal peduncle 5; pectoral $1 \frac{9}{10}$; ventral $3 \frac{1}{3}$, origin below middle of dorsal base.

Length without caudal 53 mm.

(Parr.)

North of West Indies.

Paralepis brevis Zugmayer

Paralepis brevis ZUGMAYER, Bull. Inst. Oceanogr.

Monaco, No. 193, 1911, p. 4. Res. Camp. Sci. Monaco,

No. 35, 1911, p. 61, pl. 2, fig. 7 (type from N. 37°

$11'$ W. $11^{\circ} 48'$, 4750 meters). -- EGE, Rep. Danish

Oceanogr. Exped. Medit., vol. 2, A. 13, 1930, p.

54, figs. 13-14, p. 120, fig. 29 (type; North Atlantic and Mediterranean).

Paralepis coregonoides (not RISSO) JOHNSON, Ann. Mag.

Nat. Hist., ser. , vol. 10, 1862, p. 283 (Madeira).

-- GOODE and BEAN, Oceanic Ichth., 1895, p. 119, pl.

39, fig. 149 (wrongly Polyipnus spinosus GÜNTHER p. 9)

(N. $28^{\circ} 43'$ W. $87^{\circ} 14' 30''$, 525 fathoms). -- ROULE

and ANGEL, Res. Camp. Sci. Monaco, vol. 79, 1930, p.

62 (part), pl. 3, figs. 81 to 84 (not fig. 80).

Paralepis sphyraenoides (not RISSO) GÜNTHER, Cat. Fishes

Brit. Mus., vol. 5, 1864, p. 418 (Madeira).

Paralepis borealis (not REINHARDT) SAEMUNDSON, Skrift.

Komm. Havunders. København, No. 5, 1908 (1909), p.

99 (part); Fiskar Islansk, Reykjavík, 1926, p. 394

(part); Synopsis Fishes Iceland, 1927, p. 44 (part);

Vidensk. Medd. Dansk nat. Foren. København, vol. 84,

1927, p. 177 (part).

Omosudis elongatus (not BRAUER) ZUGMAYER, Res. Camp.

Sci. Monaco, vol. 35, 1911, p. 18 (part).

Sudis bronsoni PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. 36, fig. 3. N. $22^{\circ} 43'$

W. $74^{\circ} 23'$, 8000 feet. -- NORMAN, Discovery Rep.,

vol. 2, 1930, p. 318 (S. $32^{\circ} 45'$ W. $8^{\circ} 47'$, 650 meters;

S. $33^{\circ} 25'$ E. $6^{\circ} 31'$, 1000 meters).

Depth $7 \frac{1}{4}$; head $3 \frac{1}{2}$. Snout $2 \frac{1}{10}$ in head from snout tip; eye 7, $3 \frac{1}{4}$ in snout; mouth cleft reaches $\frac{7}{8}$ to eye, length $2 \frac{1}{4}$ in head from snout tip; 5 slightly curved fairly large teeth close together at front of each premaxillary and graduated to posterior which largest, then 9 small teeth and finally 10 saw like teeth with long bases; lower jaw with 3 curved teeth followed by some small teeth with 6 fairly large, straight, erect ones; palatines in front with 3 fairly large teeth followed by 14 smaller; interorbital; apparently little convex.

Scales in lateral line 60.

D. 10, fin height $3 \frac{1}{2}$ in total head; adipose fin 4; A. 23, height of front lobe $3 \frac{1}{2}$, fin origin little nearer base of last anal ray than ventral fin origin; caudal 2, little emarginate behind; least depth of caudal peduncle $5 \frac{3}{4}$; pectoral $2 \frac{1}{10}$; ventral $4 \frac{1}{10}$, origin below middle of dorsal base.

Length 360 mm. (Zugmayer, Ege.)

North Atlantic, Mediterranean.

Paralepis sphyraenoides Risso

- Paralepis sphyraenoides RISSO, Hist. Nat. Eur. Merid.,
vol. 3, 1826, p. 473, pl. 7, fig. 16. Nice. --
CUVIER, Hist. Nat. Poiss., vol. 3, 1829, p. 360
(copied). -- VALENCIENNES, Hist. Nat. Canaries, vol.
2, pt. 2, 1836-44, p. 18 (Canaries). -- GUNTHER,
Cat. Fishes Brit. Mus., vol. 5, 1864, p. 418 (part).
-- CANESTRINI, Fauna Italia, Pesc., 1871, p. 2,
(Nice; Genoa). -- BELLOTTI, Atti Soc. Sci. Nat.
Milano, vol. 20, 1877, pp. 54, 57 (). --
MOREAU, Hist. Nat. Poiss. France, vol. 3, 1881, p.
52 (). -- BELLOTTI, Atti Soc. Sci. Nat. Mil-
ano, vol. 38, 1891, p. 138, pl., fig. 1 (compiled);
vol. 34, 1892, p. 34 (compiled). -- CARUS, Prodr.
Faun. Medit., vol. 2, 1892, p. 567 (compiled). --
LUTKEN, Vidensk. Medd. Nat. Foren. Kobenhavn, 1891,
(1892), p. 255 ().

-- PIETSCHMANN, Sitz. Ber. Akad. Wiss. Wien,
 Math.-naturw. Klasse, vol. , pt. , 1914, p.
 445, pl. 5, fig. 1 (). -- EGE, Vidensk.
 Medd. Nat. Foren. Kobenhavn, vol. 69, 1918, p. 244
 (). -- SANZO, Rendic. R. Accad. Lincei,
 vol. 27, ser. 5, 1918, p. 450 (part; larval). --
 VAILLANT, Res. Camp. Sci. Monaco, vol. 52, 1919, p.
 130 (N. $38^{\circ} 25'$ W. $20^{\circ} 59' 45''$, surface; off Morocco?,
 2480 meters). -- EGE, Rep. Danish Oceanogr. Exped.
 Medit., vol. 2, A. 13, 1930, p. 62, figs. 15-16, p.
 122, fig. 30 (North Atlantic, Mediterranean).

Sudis sphyraenoides PARR, Bull. Bingham Oceanogr. Collection,
 vol. 3, art. 3, Dec. 1928, pl. 36 (note).

Depth $11 \frac{4}{5}$ to $12 \frac{2}{3}$; head $4 \frac{7}{8}$ to 5, width 4 to $4 \frac{1}{10}$. Snout $2 \frac{1}{8}$ in head; eye $4 \frac{1}{8}$ to $4 \frac{7}{8}$, $2 \frac{1}{5}$ to $2 \frac{2}{5}$ in snout, greater than interorbital; maxillary $2 \frac{2}{5}$ in head, reaches $1 \frac{1}{8}$ in snout; maxillary teeth all small, uniform, close set, numerous; 7 teeth on each mandibular ramus as rather long canines; small uniserial teeth on each palatine with at least canine anteriorly; interorbital $6 \frac{1}{2}$ to $7 \frac{1}{8}$ in head, low, depressed. Gill rakers as minute, numerous, subequal close set denticles, greatly less than gill rakers, which 2 in eye.

Scales 62 to 67 in lateral line, extending posteriorly opposite middle of anal fin.

D. II, 9 or II, 10, origin near first fourth in space between ventral and anal origins, first branched ray 3 in head; adipose fin $6 \frac{1}{4}$ to $6 \frac{1}{2}$; A. III, 17 to III, 19, first branched $2 \frac{3}{4}$ to $3 \frac{1}{5}$; caudal small, damaged, apparently forked; 3 to $3 \frac{1}{4}$?; ventral $3 \frac{1}{4}$ to $3 \frac{2}{5}$; least depth of caudal peduncle $6 \frac{3}{4}$ to 7.

Pale brownish generally.

Opercles and lower sides of head with silvery reflections. Iris silvery gray. Fins whitish.

Atlantic Ocean.

40060 U. S. N. M. Nice, Florence Museum. Length
140 mm.

49348 U. S. N. M. Nice. M. Bellotti. Length
148 mm.

Paralepis pseudosphyraenoides Ege

Paralepis pseudosphyraenoides EGE, Vidensk. Medd.

Dansk. Naturh. Foren. Kobenhavn, vol. 69, 1918, p.

244. ; Rep. Danish Oceanogr. Exped. Medit.,

vol. 2, A. 13, 1930, pp. 70, 129, fig. 31 (distribu-

tion) (Mediterranean; Atlantic).

Sudis pseudosphyraenoides PARR, Bull. Bingham Oceanogr.

Collection, vol. 3, art. 3, Dec. 1928, p. 36 (note).

Parlepis sphyraenoides (not RIDDO) SANZO, Rendicont.

R. Accad. Lincei, vol. 27, ser. 1, fasc. 12, 1918,

p. 450 (part), fig. 2. -- ROULE and ANGEL, Res. Camp.

Sci. Monaco, vol. 79, 1930, p. 67 (part), pl. 3, fig.

85.

Paralepis pseudosphyraenoides thori EGE, Rep. Danish

Oceanogr. Exped. Medit., vol. 2, A. 13, 1930, p. 73,

figs. 17-18, p. 129, figs. 31-32. Mediterranean.

Depth $11 \frac{3}{4}$; head $4 \frac{4}{5}$. Snout 2 in head from snout tip; eye $4 \frac{1}{2}$, $2 \frac{1}{8}$ in snout; mouth cleft reaches front of orbit, length from snout tip 2 in head; interorbital very low, apparently level.

D. 11, fin base $4 \frac{2}{3}$ in total head, fin origin slightly before first fourth between ventral and anal origins; adipose fin $4 \frac{3}{4}$, over bases of last anal rays; A. 30, fin origin midway between ventral origin and caudal base; caudal forked; least depth of caudal peduncle 7 in total head length; pectoral 4?; ventral 5.

End of muzzle and upper edge of back with fine dark dots. Length 92 mm. (Ege.)

North Atlantic and Mediterranean.

Paralepis affinis Ege

Paralepis-affinis EGE, Rep. Danish Oceanogr. Exped.

Medit., vol. 2, A. 13, 1930, p. 81, figs. 20 to 21,
p. 139, fig. 141. North Atlantic Ocean, 150 to
4000 meters.

Depth $11 \frac{1}{5}$; head $5 \frac{1}{3}$. Snout $2 \frac{1}{5}$ in head; eye $4 \frac{1}{3}$, 2 in snout; mouth cleft reaches front pupil edge, length $2 \frac{1}{8}$ in head; 3 slightly curved teeth at front of each pre-maxillary, then 6 inclined and finally 18; 2 slender erect teeth at either side of mandible in front, then 2 shorter, then second pair with still longer, then 2 groups of 3 teeth of which 1 or 2 teeth equally long as longest then, and finally 2 teeth of which 1 long and posterior group of 3 short ones; 3 straight erect teeth at front of each palatine with short tooth followed by 9 curved teeth; interorbital low, apparently level.

D. 9, I, base 7 in head, inserted well behind ventral; adipose fin 5, inserted over last anal rays and extends behind anal fin base; A. 28, fin base $1 \frac{1}{8}$ in head, origin midway between ventral origin and caudal base; caudal forked, apparently less than snout; pectoral $3 \frac{4}{5}$ in head; ventral $4 \frac{1}{2}$, origin midway between front eye edge and caudal base.

End of muzzle and upper surface of head behind eye together with back dusted with minute dark dots, on tail posteriorly and caudal peduncle more or less reflective of myomeres. Length 103 mm. (Ege.)

Atlantic Ocean.

Paralepis elongatus (Brauer)

Omosudis elongatus BRAUER, Deutsch Tiefsee Exped. Valdivia, vol. 15, Tiefsee Fische, 1906, p. 140, text fig. 68. N. $2^{\circ} 36' 5''$ E. $3^{\circ} 27' 5''$, 1200 meters, Gulf of Guinea; S. $10^{\circ} 8' 2''$ E. $97^{\circ} 14' 9''$, 2400 meters, north of Cocos Keeling; N. $7^{\circ} 1' 2''$ E. $85^{\circ} 56' 5''$ ¹, 2500 meters, Bengal Bay; N. $4^{\circ} 56'$ E. $78^{\circ} 15' 3''$ E. $73^{\circ} 18' 9''$, 1900 meters, Chagos Group; S. $3^{\circ} 24' 6''$ E. $58^{\circ} 38' 1''$, 2000 meters, Seychelles. -- GILCHRIST and VONBONDE, Fisher. Marine Biol. Surv. South Africa, Rep. No. 3, 1922 (1924), No. 7, p. 7 (off Natal, 600 fathoms). -- BARNARD, Ann. South African Mus., vol. 21, June 1925, p. 249 (compiled). -- EGE, Rep. Danish Oceanogr. Exped., vol. 2, A. 13, 1930, p. 50 (discussion).

Paralepis speciosus (not BELLOTTI) PIETSCHMANN, Sitz.

Ber. Akad. Wiss. Wien, Math.naturw. Klasse, vol. ,
pt. , 1914, p. 440, pl. 4, fig. 4 (part). --

REGAN, Brit. Antarctic Terra Nova Exped., Zool., vol.
1, pt. 4, 1916, p. 138 (part).

Lestidium (Bathysudis) speciosus PARR, Bull. Bingham Ocean-
ogr. Collection, vol. 3, art. 3, Dec. 1928, p. 42 (part).

Depth $5 \frac{2}{3}$; head $3 \frac{3}{4}$. Snout 2 in head from snout tip;
eye 4, $1 \frac{7}{8}$ in snout; maxillary extends back opposite front
pupil edge, length $1 \frac{4}{5}$ in head from snout tip; premaxillary
with larger and many small teeth, in mandible 5 moderately
large and 3 or 4 smaller; 3 or 4 moderately large teeth on
palate; interorbital low, apparently level.

D. 10, fin base $4 \frac{1}{2}$ in total head length, inserted little behind ventral origin; adipose fin $4 \frac{2}{5}$; A. 25 or 26, fin base $1 \frac{2}{3}$, fin origin midway between ventral origin, and last anal ray base; caudal $2 \frac{3}{4}$, depth emarginate; least depth of caudal peduncle 8; pectoral $3 \frac{1}{8}$; ventral 8?

Back dotted with brownish black, under side of tail paler. Eight blackish peritoneal pigment sections. Length 30 mm. (Brauer.)

South Atlantic and Indian Oceans.

Paralepis pacificus Parr

Paralepis pacificus PARR, Bull. Bingham Oceanogr.

Collection, vol. 2, art. 4, Oct. 1931, p. 19, figs.

6 (outline) 7 (dentition). N. $20^{\circ} 48' 15''$ W. 106°

$11' 50''$, 540 fathoms.

Paralepis nudus (Gilbert)

Lestidium nudum GILBERT, Bull. U. S. Fish Comm., vol. 23,

pt. 2, 1903 (1905), p. 607, fig. 236. Pailolo Channel,

between Molokai and Maui, in 283 to 284 fathoms. --

WAITE, Trans. New Zealand Inst., vol. 42, 1909 (1910),

p. 374 (Denham Bay, Sunday Island, Kermadec Group).

-- PARR, Bull. Bingham Oceanogr. Collections, vol. 3,

No. 3, Dec. 1928, p. 44 (compiled). -- FOWLER, Mem.

Bishop Mus., vol. 10, 1928, p. 66 (compiled).

Depth $11 \frac{1}{3}$; head $4 \frac{2}{5}$, width $4 \frac{1}{2}$. Snout $1 \frac{7}{8}$ in head; eye $5 \frac{2}{3}$, $2 \frac{4}{5}$ in snout, greater than interorbital; maxillary reaches $\frac{9}{10}$ to eye, length 2 in head; interorbital $7 \frac{1}{3}$, level or only slightly depressed medially. Gill rakers as row of short, minute, spinules or denticles or irregular length.

No scales. Lateral line wide tube, inclosed by series of about 70 small, closely imbedded concealed scales, not extended behind middle of anal.

D. 9, fin height $4 \frac{1}{5}$? in head; adipose fin $4 \frac{1}{4}$; A. III, 31, first branched ray $4 \frac{1}{4}$; least depth of caudal peduncle 9; caudal $5 \frac{1}{3}$?, damaged, well forked; pectoral 3; ventral $4 \frac{1}{5}$?

Pale or light brown, back scarcely dusky. Dark brown Y like mark on occiput and nape. Sides of snout and gill membranes dusky. Opercle silvery white. Caudal peduncle with dusky, extends forward opposite middle of anal. Fins pale brownish to whitish. Caudal little dusky. Each ventral with small black basal spot.

Pacific Ocean.

51615 U. S. N. M. Pailolo Channel, between Molokai
and Maui. In 284 fathoms.

Length 195 mm. Type of Lestidium nudum.

Paralepis philippinus new species

Depth $10 \frac{4}{5}$ to 12; head $4 \frac{3}{5}$ to $4 \frac{2}{3}$, width $4 \frac{1}{2}$ to $4 \frac{3}{4}$. Snout $1 \frac{4}{5}$ to $1 \frac{7}{8}$ in head; eye $5 \frac{1}{3}$ to 6, $2 \frac{4}{5}$ to $3 \frac{1}{5}$ in snout, greater than interorbital; maxillary reaches $1 \frac{1}{10}$ to $1 \frac{1}{8}$ in snout, length 2 to $2 \frac{1}{8}$ in head; maxillary teeth all small, uniform; mandible with 8 pairs of rather long slender canines; 4 large depressible canines on each palatine; interorbital $6 \frac{2}{5}$ to $6 \frac{2}{3}$, low, level, depressed medially. Gill rakers as minute subequal short points, greatly less than gill filaments, which $1 \frac{1}{2}$ in eye.

Scales in lateral line 61 to 64 extending about midway or little beyond in length of anal fin. Apparently no other scales on body.

D. II, 8 or II, 9, fin origin about $\frac{2}{5}$ to $\frac{3}{7}$ in space between ventral and anal origins, first branched ray $3 \frac{7}{8}$ to $4 \frac{1}{8}$ in head; adipose fin 6 to $6 \frac{2}{5}$; A. III, 34 or III, 35, first branched ray $3 \frac{7}{8}$ to $4 \frac{1}{4}$; least depth of caudal peduncle $1 \frac{1}{3}$ to $1 \frac{2}{3}$ in eye; caudal 3 to $3 \frac{1}{5}$ in head, with slender pointed lobes, deeply forked; pectoral $2 \frac{2}{3}$ to $2 \frac{7}{8}$, with 11 or 12 rays; ventral $3 \frac{3}{4}$ to 4, rays 9.

Pale or light brown generally, usually with distinct brassy sheen on belly. Opercles and lower sides of head with silvery white reflections. Iris silver to leaden gray. Interorbital and occiput with dark brown. Small blackish brown spot close before front eye edge. Sides of caudal peduncle and tail posteriorly with brassy reflections. Fins all more or less pale to whitish.

Diagnosis. Related to *Paralepis nudus* (Gilbert) but differs in the slightly more posterior insertion of the dorsal. In *P. nudus* the dorsal origin falls near first 2/7 in space between ventral and anal origins. It also has fewer anal rays than the present species.

Type No.

U. S. N. M.

5 examples. Port Dupon, Leyte. March 17, 1909. Length 129 to 140 mm. From the jaws and gullet of one example several larval fishes, crustacea and annelids were taken. Paratypes.

1 example. Varadero Harbor. July 22, 1908. Length 122 mm. Type.

Paralepis thermophilus Ege

Paralepis thermophilus EGE, Rep. Danish Oceanogr. Medit.,
vol. 2, A. 13, 1930, p. 89, figs. 22-23, p. 142, fig.
144. North Atlantic Ocean, 600 meters.

Depth 11; head $4 \frac{1}{3}$. Snout $2 \frac{1}{10}$ in head from snout tip; eye $4 \frac{3}{4}$, $2 \frac{1}{5}$ in snout; mouth cleft reaches slightly behind front eye edge though not to pupil, length 2 in head from snout tip; 2 curved teeth at front of each premaxillary, followed by 12 wide spaced teeth; at front of mandible either side an erect, slender, slightly curved tooth, followed by little tooth, then 4 long teeth with shorter one before first and shorter also before second and finally isolated short posterior tooth; each palatine with 3 fairly large front teeth and further back 5 smaller ones; interorbital very, apparently little convex.

D. 11, fin base $4 \frac{7}{8}$ in total head length, origin slightly before ventral origin; adipose fin $4 \frac{3}{4}$, wholly above bases of last anal rays; A. 30, fin base $1 \frac{1}{4}$ in total head; origin midway between ventral origin and base of last anal ray; caudal $2 \frac{1}{4}$? in total head, forked; least depth of caudal peduncle $6 \frac{1}{5}$; pectoral $3 \frac{2}{5}$?; ventral $6 \frac{1}{3}$?

Muzzle and upper edge of back from behind eye covered with minute dark dots, also some sprinkled before lower edge of eye, several clusters along front of abdomen, postventral edge to front of anal and patch before caudal base. Length 43.5 mm. (Ege.)

North Atlantic.

Paralepis intermedius Poey

Paralepis intermedius POEY, Rep. Fis. Nat. Cuba, vol. 2, 1866, p. 416. Cuba. -- GOODE and BEAN, Oceanic Ichth., 1895, p. 120 (copied). -- EGE, Rep. Danish Oceanogr. Exped., vol. A. 13, 1930, p. 94, figs. 24-25, p. 145, fig. 36 (Atlantic).

Sudis intermedius JORDAN and EVERMANN, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 600 (copied).

Lestidium intermedius PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. (44) 46
(not material, which apparently unidentifiable).

Depth $14 \frac{2}{3}$; head $6 \frac{1}{6}$. Snout $1 \frac{9}{10}$ in head from snout tip; eye 5, $2 \frac{1}{2}$ in snout; mouth cleft reaches front of eye, length 2 in head from snout tip; interorbital low, apparently slightly convex.

D. 10, fin base 6 in total head length, origin little nearer anal than ventral origin; adipose fin?; A. 43, origin midway between ventral origin and last anal ray base; caudal emarginate; least depth of caudal peduncle $4 \frac{1}{4}$ in total head; pectoral $3 \frac{3}{4}$; ventral 5.

Length 43.5 mm.

(Ege.)

North Atlantic.

Paralepis japonicus (Tanaka)

Lestidium japonicum TANAKA, Annotat. Zool. Japon.

Tokyo, vol. 7, pt. 1, Dec. 25, 1908, p. 27. Sagami

Sea. -- PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, No. 3, Dec. 1928, p. 44 (compiled).

Depth 15; head 5 to 5 1/8. Snout 2 in head; eye 6 1/3, impringing on upper profile; mouth scarcely reaches orbit, lower jaw slightly longer; anterior arched portion of pre-maxillaries toothless, near front each side long depressible canine, preceded by one or 2 much smaller, depressible teeth; mandibular teeth biserial, outer row short and fixed, inner row longer, canine like, depressible, 9 each side; palatine teeth biserial, inner large, canine like, depressible, 6 to 9 each side, outer short, fixed and extend further back; each side near median part of tongue longitudinal series of small depressible teeth; interorbital 10 to 14 in head, slightly concave.

Lateral line incomplete, ends behind middle of anal fin.

D. 9 or 10, inserted slightly nearer anal origin than ventral origin also slightly nearer pectoral tip than caudal base; adipose fin small, inserted before last anal ray; A. 42 to 49; caudal forked, rudimentary rays reach anal base; pectoral rays 10 to 12; ventral 9 or 10, origin nearer hind nostril than caudal base.

Translucent, back somewhat darker, sides of snout blackish. Small black spot directly in front of eye and rather faint one immediately below. Opercles externally bright silvery, internally blackish. Median line of abdomen blackish with median narrow whitish space backward from vertical through pectoral tip. Caudal peduncle washed with blackish and silvery, extended forward to middle of anal. Peritoneum black. Fins largely translucent, slightly dusky. Caudal and anal slightly blackish, front part of anal black punctate at base. Ventral similar basally.

Length without caudal 190 mm.

(Tanaka.)

Japan. Closely related to Paralepis intermedius.

Genus Sudis Rafinesque

Sudis RAFINESQUE, Carr. Nuov. Animal. Piant. Sicil.,

1810, p. 60. Type Sudis hyalina RAFINESQUE, monotypic.

Body moderately compressed, elongate, Head compressed.
Teeth triangular, edges uneven or jagged and of equal length.
Palatine teeth very small in young, absent with age. Body
covered by minute or moderate scales. Dorsal rays 14 or 15.
Pectoral fin rays long in postlarval stages or nearly reach
dorsal fin.

Sudis hyalina Rafinesque

Sudis hyalina RAFINESQUE, Carr. Nuov. Animal. Piant.

Sicil., 1810, p. 60, pl. 1, fig. 2. Sicily. --

BONAPARTE, Iconogr. Fauna Italica, vol. 3, Pesci,
pt. 1, fasc. 29, 1840, no pagination, pl., fig. 1

(Italy); Cat. Metod. Pesc. Europ., 1846, p. 35. --

GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864, p.

420 (Messina). -- CANESTRINI, Fauna Italia, Pesci,

1874, p. 127 (Sicily). -- GOODE and BEAN, Oceanic

Ichth., 1895, p. 127, pl. fig. 144 (compiled). --

FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1911

(1912), p. 571 (BONAPARTE material).

Sudis hyalinus BELLOTTI, Atti Soc. Ital. Sci. Nat.

Milano, vol. 20, 1877, p. 54. -- LUTKEN, Vidensk.

Medd. naturh. Foren. Kobenhavn, ser. 5, vol. 3, 1891

(1892), -- EGE, Vidensk. Medd. Naturh. Foren. Koben-

havn, vol. 69, 198, p. 243. -- PARR, Bull. Bingham

Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p.

35 (compiled).

Paralepis hyalinus CUVIER, Hist. Nat. Poiss., vol. 3,

1829, p. 361 (copied). -- BELLOTTI, Atti Soc. Ital.

Sci. Nat., vol. 33, Oct. 1891, p. 140, pl., fig. 5-5a

(compiled); vol. 34, 1892, p. 34 (diagnosis). --

SANZO, R. Comm. Talass. Ital. Venice, Mem. 59, 1917,

(larval).

Paralepis hyalina CARUS, Prodr. Fauna Medit., vol. 2,

1893, p. 567 (compiled).

Depth 9 to $10 \frac{1}{2}$; head 3 to $3 \frac{1}{5}$, width $4 \frac{1}{2}$ to $5 \frac{2}{3}$. Snout $1 \frac{3}{5}$ to $1 \frac{2}{3}$ in head from snout tip; eye $5 \frac{1}{3}$ to 7, $3 \frac{1}{4}$ to 5 in snout, greatly exceed interorbital; maxillary reaches $\frac{1}{5}$ to eye or $\frac{1}{8}$ in eye, length 2 in head; interorbital 8 to $8 \frac{2}{3}$, depressed, slightly concave medially. Gill rakers reduced numerous minute uniform denticles; gill filaments $2 \frac{1}{4}$ in eye.

Scales 65 to 70 in lateral line, extend nearly to caudal base.

D. II, 10, first branched ray $3 \frac{1}{4}$ to $3 \frac{4}{5}$ in head; adipose fin $7 \frac{2}{5}$ to 11; A. III, 18, first branched ray 4 to $4 \frac{4}{5}$; Caudal $2 \frac{1}{2}$ to $3 \frac{1}{10}$, well emarginate or forked; least depth of caudal peduncle $8 \frac{4}{5}$ to $9 \frac{1}{2}$; pectoral $1 \frac{3}{4}$ to $2 \frac{1}{8}$; ventral $4 \frac{1}{8}$ to $4 \frac{1}{4}$.

Pale or dull brown, nearly uniform. Sides of head with pale or whitish reflections. Fins pale brownish. Iris dull slaty.

Mediterranean.

48268 U. S. N. M. Bay of Naples, Italy. S. E. Meek.

Length 410 mm.

to A. N. S. P. Italy. C. L. Bonaparte 354.

Dr. T. B. Wilson. Length 330 to 405 mm. 3 examples.